



SATURDAY, SEPTEMBER 25, 1875.

Stewart's Throttle-Valve Lever.

This contrivance, which is represented by our engravings, of which fig. 1 is a plan and fig. 2 an elevation, consists of a lever, *a*, which operates a shaft, *h*, on which an eccentric, *b*, is keyed. This eccentric is embraced by a strap with a lug, *f*, on the back, to which the short lever, *c*, is attached. To the latter the throttle stem is connected, which is operated by the lever *c* in the usual way. The manner in which the lever is moved by the eccentric is also apparent from the engraving. The eccentric strap is cut through the lugs at *e*, and is clamped in the eccentric so as to hold it in any given position by the hand-screw, *d*. The leverage secured by the use of both the eccentric and the lever *a* enables a locomotive runner to move the throttle-valve with the greatest ease and steadiness, and it can be securely fastened in any position by the screw *d*.

This arrangement can be easily attached to the usual throttle lever by simply cutting it off and attaching the end to the strap at *f*. It was first applied to engines on the Panama Railroad by the inventor, Mr. C. E. Stewart, who was formerly Master Mechanic of that line. It is now used on the Hudson River, Long Island, Flushing and other railroads, and the inventor has numerous letters from locomotive runners testifying to its usefulness in starting, stopping and regulating the speed of engines. They report that it places the throttle completely under the control of the engineer, avoiding slipping of the wheels, and reduces the labor of the runner very materially, thereby allowing him to give closer attention to track and road signals.

The inventor may be addressed to the care of the Portland Company, Portland, Maine.

Contributions.

Keeping Freight Car Mileage.

ERIE, Pa., Sept. 17, 1875.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The article in your issue of Aug. 14, headed "Keeping Freight Car Mileage," written by Mr. Grow, of the Central Pacific Railroad of California, contains food for thought for every progressive railway official in the land. The cost of keeping the mileage of freight cars has deterred many railway companies from attempting it. Yet here is a company which has tried it and found that "it pays." How many railway officials honestly desire to practice true economy by buying and using only the best wheels, knowing that the saving in this most important item will materially affect the amount of dividends for the stockholders, but owing to a want of records they do not know what make of wheels has proved best. If the managers of railways would insist upon a correct mileage being kept of the performance of all wheels used on their roads, they would soon discover that the average mileage made by the best wheels is so much greater than that of the so-called "cheap wheels," that they would at once stop using any but the best. Then, too, they would be able to bargain with the wheel-makers to pay a fixed sum per thousand miles run for wheels, and thus secure their companies from all loss on account of poor wheels. True, this would probably soon stop the manufacture of poor wheels, and rapidly raise the standard of car wheels in general, and save hundreds of thousands of dollars to railroad companies. It might interfere with those who hope to succeed by bribery, but the traveling public, rejoicing in greater security, would waste no sympathy on them.

W. R. D.

Car-Wheel Production at Ramapo.

RAMAPO, September 11, 1875.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Sojourning among these hills and mountains, I had occasion to visit the Ramapo Wheel and Foundry Company's Works a few days since, and while there I saw a large train of 20 cars standing on the company's switch, loaded with over 800 wheels, amounting to over 220 tons, covering shipments to different parties, and as this train slowly moved off, drawn by one of the heavy Erie mogul engines, I could not help hoping that this was a beginning of better times to all the manufacturing companies of our country.

The system employed by this company for handling and loading wheels is very complete in all its details. On inquiry I found that nearly all this large number of wheels were loaded by two men in twelve working hours.

I also learned that this company is now making twice the number of wheels that they made a month ago.

These facts seem to me to indicate, what we are now all looking for, an increase of business, at any rate in the railroad line.

W. F. ZIMMERMANN.

The Process of Car-Painting.

[ADDRESS BY R. M'KEON, MASTER-PAINTER, AND SECRETARY OF THE MASTER CAR PAINTERS' ASSOCIATION, AT THE SIXTH ANNUAL CONVENTION, SEPT. 8, 1875.]

In presenting my views on the subject of car-painting, I shall aim to present to you a clear and comprehensive idea of the principal operations connected therewith. I make no great profession of my ability, but I certainly should have acquired some knowledge, and that of a practical nature, some twenty-five years having been devoted exclusively to the business. My long experience and constant practice, together with being brought in contact with others of the profession, have given me that knowledge of the art which can only be secured by close attention and some study.

I shall, in my remarks, aim to embody in as little compass and in as plain statements as possible the knowledge I have secured by personal observations, dealing directly with the subject, and I hope that whatever ideas I advance may be of interest to the craft generally, and aid to draw out the views of other members of this Association, who are better posted and more able to handle this subject than myself.

I do not claim that I have arrived at perfection in car-painting, nor do I wish to be understood as professing to give instruction to the experienced workman, or to lay down any new plans, or introduce new ideas for their guidance; but we all know that much may be learned and valuable information secured by contrasting the different modes of painting, and all practical car-painters will readily admit that capital ideas have often been advanced by those who have had but a brief experience in the business compared with others. We can all recall to mind something gained in this way. Some, perhaps, will not admit that the workmen employed under their supervision know any more than they do themselves, and this is equally as true of other trades as of painters, for I have seen work spoiled, simply by the foreman in charge adhering to his

or failure. The priming should be made of the proper material, mixed with care from good lead and good oil, and not picked up from old paints which have been standing mixed, and must necessarily be fat and gummy, for such is unfit for use on a good job, and will have a decided tendency to spoil the whole work.

Special care should be exercised, both in mixing and applying the priming, and it should be put on very light, so that it may penetrate well into the wood. Too much oil is worse than not enough. Good ground lead is by far the best material for the under coats on a car, and although I have tried other materials for priming, yet I have failed to find anything equal to the lead.

Two coats should be given to the car before it is puttied, as it is best to fill well with paint the nail-holes and plugs, as well as defects in the wood, so that moisture may not secure a lodgment which otherwise will cause putty to swell, although sometimes unseasoned lumber will swell the putty, and as it shrinks the nail remains stationary, and of course the putty must give way.

PUTTING AND LEVELING THE SURFACE.—In mixing putty, which may be a small matter with some, take care to prepare it that it will dry perfectly hard in eighteen hours. Use ground lead and japan, stiffening up with dry lead, and whatever coloring you may require in it to match your priming coats. The next coats, after the work is well puttied, should be made to dry flat and hard. Two coats should be applied, and for all ordinary jobs or cheap work, sand-papery is all that is necessary for each coat; but when a good surface is required, I would recommend one coat to be put on heavy enough to fill the grain, and before being set, scrape with a steel scraper. The plain surface is all that requires coating and scraping with the heavy mixture; for this coat, which we call "filling," I use one-half ground lead and any good mineral which experience has shown can be relied on. The scraping of the panel work will fill the wood equal to two coats of rough-stuff, and saves a great amount of labor over the old process, when so much rubbing with lump pumice stone was done. Sand-paper when the filling is thoroughly hard, and apply another coat of paint of ordinary thickness, when, after another light sand-papery, you have a good surface for your color.

Rough coating on cars has gone almost out of use, and I believe that but few shops are now using it to any extent. My experience is that paint has less tendency to crack where rough stuff is left off. I do not claim that the "filling" was the principal cause of the cracking, if it was properly mixed, but I believe the water used in rubbing down a car with the lump pumice-stone injures the paint, as it will penetrate in some places, more particularly around the moldings and plugs.

COLORING.—The car being ready for the finishing color, this should be mixed with the same proportions of dryer as the previous coat, or just sufficient to have it dry in about the same time. A very great error with many car-painters is using a large portion of oil in the under coats, and then but little, if any, in the finishing coats; this has a decided tendency to crack the under coats being more elastic. I always aim to have color dry in about the same time, after I have done my priming; by this plan, I secure what all painters should labor to accomplish—very little liability to crack. Work will of course crack sometimes after being out a few months, or when it has repeated coatings of varnish; and using a quick rubbing varnish on work will cause it to give way in fine checks quicker than anything else. Many of the varnishes we use are the cause of the paint cracking, and no painter has been wholly exempt from this trouble.

JAPAN DRYERS.—The most common cause for paint cracking is poor japan, which is the worst enemy that the car-painter has to contend with; the greater part of the japan that we get is too elastic, and will dry with a tack, and the "japan gold-size" we have has generally the same fault, although the English "gold-size" is generally of good quality, but its high price is an objection to its use. A little more care in the manufacture of japans would give us a better dryer, and few would object to the additional cost. Japan that I have frequently had I found to curdle in the paint; it would not mix with it, but would gather in small gummy particles on the top. Work painted with such material cannot do otherwise than crack and scale, and the remedy lies only in getting a good, pure article of turpentine japan.

WHITE LEAD.—In regard to using ground lead, car-painters differ, as some prefer to grind their own in the shop. I use the manufactured lead, and my reasons for doing so are that it is generally finer than any shop can grind it with present facilities, and it has age after grinding, which improves its quality. You can also get a purer lead and with more body than you can by grinding in the shop, which is a fact that I think most painters must admit; I have tested it very fully, and am convinced on this point.

Permit me to make a few suggestions here in regard to the mixing of paint, which may not fully agree with others' views. There is just as much paint that cracks by putting it on too flat as by using too much oil. I have seen some painters mix their finishing color so that it was impossible to get over a panel of ordinary size before it was set under the brush, and consequently the color would rough up. Color should be mixed so that it will not flat down for some time after leaving it, and then you have got some substance that will not absorb the varnish as fast as it is applied to the surface. This quick drying of color is not always caused by want of oil in it, but because there is too much japan, and a less quantity of the latter will do better work and make a smoother finish. Give your color 48 hours to dry between coats; I always give that time, unless it is a hurried job, and we have very few such jobs in our shop, as experience has fully demonstrated that it is poor economy to hurry work out of the shop before it is properly finished.

ON.—In car-painting, both raw and boiled oils are used, and good work may be done with either; but I would recommend oil that is but slightly boiled in preference to either the raw or the boiled. After it is boiled, if it is done in the shop, let it stand twenty-four hours to settle, then strain off carefully; this takes out all the impurities and fatty matter from the oil, and it will dry much better, nor will it have that tack after drying that you find with common boiled oil. Use the proper quantity

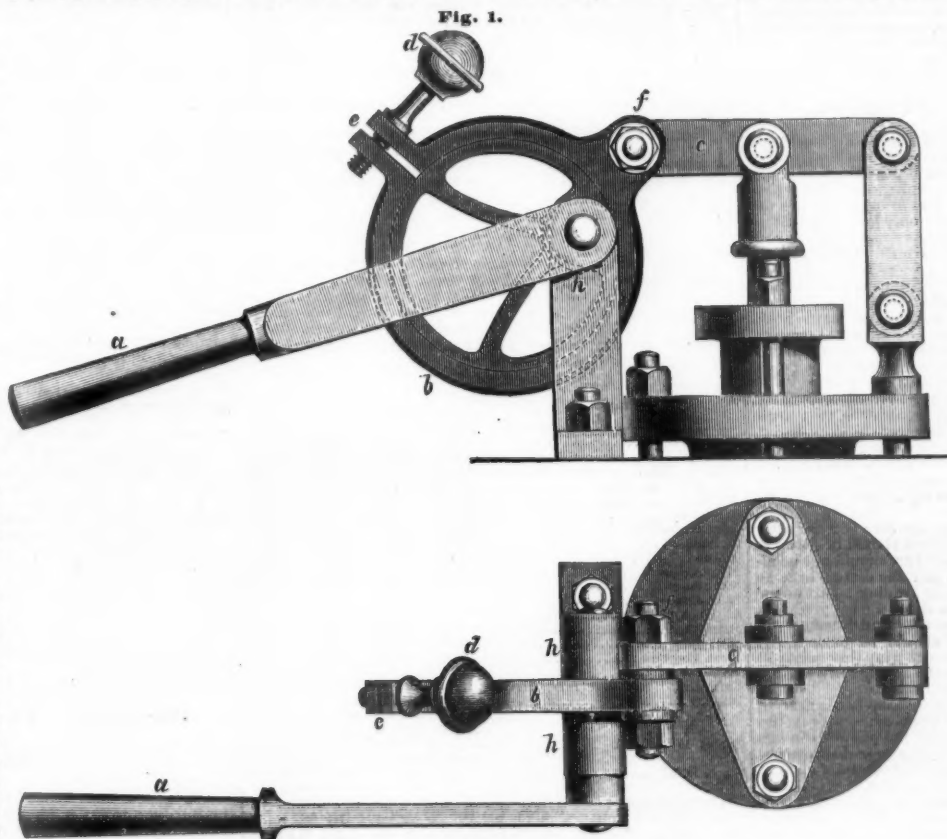


Fig. 2. STEWART'S IMPROVED THROTTLE-LEVER.

own plan, rather than take a suggestion from the workman employed under him.

Such pride is not excusable. Some are always stubborn to admit facts, instead of being ready to examine into them; but it is always a wise plan to admit others' theories and investigate them. Do not set yourself forward as perfect in your calling, and you will in the long run acquire greater credit from your employers. We know that by pursuing a work on any subject, we are enabled to combine the experience and observations of others with our own, and the searcher after information will profit accordingly. I hope that my remarks may tend to draw out some one better adapted than myself to advocate the interests of car-painters, and to give us all a little more light on the question of how to paint a car. If any are here, the field is open, and I will gladly give them a hearing; for no one, whether he be a master-painter or working under instruction, would be so unwise as to reject advice from another, although the latter may not be considered superior to him as a workman.

EXPENSE OF PAINTING A CAR.—A first-class day railway coach, on any of our main roads, costs, when complete, about \$6,000. To protect this work the painter expends from three to six hundred dollars. The latter figure will make a first-class job. The car has been completed in the wood shop, and is turned over to the painter, who is responsible for the finish. He is expected to smooth over all rough places or defects in the wood, which requires both patience and skill to make the work look well.

Twelve weeks should be the time allowed to paint a car, and it can not be done in any less time to make a good job, that will give credit to the painter and all other parties interested in the construction and finish of the car. Too much painting is done in a hurry; proper time is not given the work to dry or become thoroughly hardened before it is run out of the shop, and consequently it does not always give the satisfaction it should; nor can it be expected that hurried work will be so lasting or durable as that which has the necessary time given to finish it.

The priming coat of paint on a car is of as much importance as any succeeding one, and perhaps more. I have seen good work ruined in the priming by little or no attention being given by the painter to the mixing and applying of the first coat. The foundation is the support, and on that rests your success

of dryer in mixing your paint, and a good, reliable job will be the result. In car-painting, I would never recommend the use of prepared colors which are ground in oil, as nine-tenths of such colors are ground in a very inferior oil, and they may have been put up for a great length of time, in which case they become fatty, and will invariably crack. These canned colors do not improve with age, as lead and varnish do. Finishing colors should all be ground in the shop, unless special arrangements can be made with manufacturers to prepare them, and the color should be fresh, not over six or eight days old after being mixed and open to the air. Enough may be prepared at a time to complete the coating on a job, but when color stands over a week, it is not fit to use on first-class work, as it becomes lifeless, and has lost that free working which we find in fresh-mixed colors; such color may, however, be used upon a cheap class of work, or on trucks, stops, &c., so that nothing need be wasted in the shop.

VARNISHING.—Three coats of varnish over the color is necessary on a first-class coach. The first coat should be a hard drying varnish, put on the flat color; the quick rubbing that some use I would not recommend, but one that will dry in five days (in good drying weather) sufficiently hard to rub in the best for durability. After stripping and ornamenting the car, and when thoroughly washed, give a coat of medium drying varnish; let this stand eight days; then rub lightly with curled hair or fine pumice-stone, and apply the finishing coat, which is "wearing body;" this will dry hard in about ten days, after which the car may be run out of the shop. It should then be washed with cold water and a soft brush, and it is then ready for the road. In varnishing, many will apply the varnish as heavy as they can possibly make it lay, when, as a consequence, it flows over or runs and sags down in ridges, and of course does not harden properly; this also leaves a substance for the weather to act on. It is better to get just enough on a coat to make a good even coating which will flow out smooth, and this will dry hard, and will certainly wear better than the coat that is piled on heavy.

Varnishing, we claim, can be overdone, some painters' opinions to the contrary notwithstanding. We have heard of those who put two and a half gallons on the body of a fifty-foot car at one application, and we have also listened to the declaration made by a member of the craft, that he put two gallons on the body of a locomotive-tank. Such things are perhaps possible, and may have been done, but if so, we know that the work never stood as well as it would if done with one-half the quantity to a coat. In varnishing a car care should be taken to have the surface clean: water never injures paint where it is used for washing, and a proper attention to cleanliness in this respect, and in the care of brushes used for varnishing, will insure you a good-looking job.

SUGGESTIONS OF REGULATION OF THE SHOP.—Perhaps your shop facilities for doing work are none of the best, but do the best you can with what you have; select, if possible, a still, dry day for varnishing, especially for the finishing coat. Keep your shop at an even temperature; avoid cold draughts on the car from doors and windows; wet the floor only just sufficient to lay the dust, for if too wet the dampness arising will have a tendency to destroy the luster of your varnish. Of course, we cannot always do varnishing to our perfect satisfaction, especially where there are twenty-five or thirty men at work in an open shop, and six or eight cars are under the process of painting, when more or less dirt and dust are sure to get on the work.

A suggestion might here be made to railroad managers, which is, that no paint-shop is complete where the entire process of painting and finishing a car has to be done in one open shop. A paint-shop should be made to shut off in sections by sliding-doors, one part of the shop being used exclusively for stripping and varnishing. I know from experience that nine-tenths of the railroad paint-shops are deficient in this particular, and still we are expected to turn out a clean job, no matter what difficulties we are compelled to labor under. Many further hints might be given in regard to this matter of shop facilities and conveniences, but as it is not here my object to argue the point, I leave it with this brief mention.

PROPER CARE OF CARS.—In regard to the care of a car after it has left the shop, I think more attention should be given to this than is done on many roads. The car should not be allowed to run until it is past remedy, and the dirt and smoke become embedded in the varnish, actually forming a part of the coating, so that when you undertake to clean the car you must use soda or soap strong enough to cut the varnish before you succeed in removing the dirt. Cars should be washed well with a brush and water at the end of every trip; this only will obviate the difficulty, and these repeated washings will harden the varnish as well as increase its luster.

We know that in washing a car, where soap is required to remove the dirt and smoke, it is almost impossible to get the soap washed off clean, and if it is not quite impossible, the hot sun and rain will act on the varnish and very soon destroy it.

Cars should be taken in and revarnished at least once in twelve months; and if done once in eight months, this is better for them, and will require only one coat, but where they run one year they will generally need two coats. Those varnished during the hot months will not stand as well as if done at any other time.

Painting done in extreme cold weather, or in a cold shop, is more liable to crack than if done in warm weather.

Paint dried in the shop, where there is a draught of dry air passing through it, will stand better than that dried by artificial heat; and you will find, by giving it your attention, that work which has failed to stand, and that cracked or scaled, was invariably painted in the winter season or in damp, wet weather. I have paid some attention to this matter, and know the result.

In concluding these remarks, let me say to the members here, that more thorough organization is what is needed to secure good results. We must labor for this more earnestly in the future, and strive to enlist the interest and co-operation of those of our craft who may be better qualified than we are to explain their experiences in the matter of car-painting, so that we may return to our shops, after these annual meetings, with a store of knowledge which will be of benefit to each of us in the work before us, and enable us more clearly to surmount the difficulties which the car-painter labors under in finishing a car to his full satisfaction.—From advance proofs of the Hub.

Production of Rails in the United States in 1874.

The following statistics have been compiled from returns made to the American Iron and Steel Association by its Secretary, Mr. James M. Swank, and published in the *Bulletin of the Association*. They are doubtless the most complete and accurate attainable:

Nineteen States made rails in 1874, against 18 States in 1873, Kansas having entered the list of rail-making States on the 26th of May, 1874, when the Topeka Rolling Mill was put in operation. This was the first rolling mill in Kansas. Since its erection the Decatur Rolling Mill has been removed from Decatur, Illinois, to Rosedale, Wyandotte County, Kansas, and there are now two rail rolling mills in that State. A rail rolling mill has this year gone into operation at Laramie, in Wyoming Territory. It is owned and operated by the Union Pacific Railroad Company.

The total production of rails of all kinds in the United States in 1874 was 729,413 net tons, against 890,077 tons in 1873, 1,000,000 tons in 1872, and 775,733 tons in 1871. The following table

will show the States which produced rails in 1874, and the character of the product, in net tons:

STATES.	New Iron Rails and Bessemer Steel Rails—Over 40 lbs.	New Iron Rails—Under 40 lbs.	Re-rolled Iron Rails—All sizes.	Steel Rails other than Re-rolled and Steel-headed Rails.	Street Rails.	Total.
Maine.....	.....	.....	14,650	.....	.....	14,650
Vermont.....	.....	.....	9,400	1,000	.....	10,400
Massachusetts.....	.....	.....	24,765	.....	.....	24,765
New York.....	22,982	.....	9,505	14,007	485	46,979
New Jersey.....	1,300	.....	1,123	597	517	3,537
Pennsylvania.....	179,774	19,732	55,488	1,377	12,917	209,288
Maryland.....	.....	.....	48,008	.....	.....	48,008
Georgia.....	.....	.....	8,061	.....	.....	8,061
West Virginia.....	.....	.....	822	.....	.....	822
Kentucky.....	2,500	1,150	2,000	.....	418	6,068
Tennessee.....	1,200	200	12,293	.....	.....	13,693
Ohio.....	43,320	7,384	29,781	200	1,876	82,561
Indiana.....	314	522	19,781	.....	.....	20,617
Illinois.....	73,783	.....	51,234	.....	86	125,103
Michigan.....	.....	630	1,818	.....	.....	2,448
Wisconsin.....	8,288	840	20,552	.....	.....	29,680
Missouri.....	10,517	1,500	6,900	.....	.....	24,017
California.....	.....	.....	16,576	.....	440	17,016
Kansas.....	.....	.....	2,000	.....	.....	2,000
Total.....	349,978	32,480	323,035	17,181	6,739	729,413

* Includes 100 tons under 40 lbs.

† Includes 2,200 tons under 40 lbs.

‡ Includes 1,000 tons Bessemer steel street rails.

The whole number of rail rolling mills in the United States in 1874 was 91, of which 57 make heavy rails mainly, and 34 make only light or street rails. Of the whole 91 mills, 22 made no rails in 1874. The product of the year was therefore rolled by 69 mills, and many of these ran only a part of the time. The capacity of all the rail rolling mills of the country is at least double the product of 1874, which was 729,413 net tons. Of the 67 mills which made rails in 1874, 7 made both iron and Bessemer steel rails, 1 made Bessemer steel rails exclusively, 2 made steel-headed rails exclusively, 2 made steel-headed rails and iron rails, and 1 made solid cast steel rails and iron rails.

It will be observed that almost one-half of the total rail product of 1874 was composed of old rails re-rolled. The proportion of old to new rails was almost exactly the same in 1873. Of the new rails produced in 1874, 144,944 net tons, or more than one-third the total quantity, were of Bessemer steel, of which further particulars will be found elsewhere. The product of street rails in 1874 was much less than in 1873, being 6,739 net tons in the former year, against 9,430 tons in the latter year.

Below is a table which shows the production of each of the rails making States during the past four years. In 1872 the production of street, mine and light rails is given in the aggregate, but in the other years it is incorporated with the general rail product of the several States. It will be seen that Pennsylvania maintains her place at the head of the list, and that during 1873 and 1874 Illinois has ranked next to her.

STATES.	1871.	1872.	1873.	1874.
Pennsylvania.....	335,604	419,529	328,522	259,284
Illinois.....	91,178	106,916	136,102	125,103
Ohio.....	75,782	121,923	130,326	82,561
New York.....	87,022	82,457	59,764	46,979
Maryland.....	44,941	26,472	42,356	48,008
Wisconsin.....	28,774	37,284	39,495	29,680
Massachusetts.....	28,864	29,242	34,034	24,765
Indiana.....	12,778	23,893	26,579	20,617
Maine.....	13,385	14,058	15,500	14,650
Missouri.....	8,200	15,500	14,020	24,017
Tennessee.....	9,667	14,520	15,973	13,693
New Jersey.....	6,700	9,185	13,749	3,537
Kentucky.....	6,000	4,000	11,386	6,068
Georgia.....	7,840	6,930	8,275	8,061
Michigan.....	14,000	9,883	4,433	2,448
West Virginia.....	5,000	20,100	4,000	822
Vermont.....	.....	.....	6,088	10,400
California.....	.....	.....	475	17,016
Kansas.....	.....	.....	.....	2,000
Street, mine and light rails.....	775,733	941,992	890,077	729,413
Total.....	775,733	1,000,000	890,077	729,413

The total importation of new rails in 1874 was as follows: Of iron, 7,796 net tons; of steel, 100,486 tons; total, 108,282 tons. The total production was 729,413 tons, of which 144,944 tons were steel. The probable consumption of rails during the year was, therefore, 837,695 net tons, against 1,148,850 tons in 1873 and 1,590,850 tons in 1872. The importation of old rails in 1874 did not greatly exceed 5,000 tons.

The following summary will show the sources of rail supply during these three years, in net tons:

	1872.	1873.	1874.
Rails of all kinds.....	1,000,000	890,077	729,413
Importation.....	580,880	258,773	108,282

Consumption..... 1,580,880 1,148,850 837,695

Our exports of rails during the past four years have not been sufficiently large to affect appreciably the above figures of home consumption. They were as follows in net tons: 1871, 333; 1872, 1,212; 1873, 375; 1874, 1,257.

The statistics of our imports and exports of rolled iron other than rails are most satisfactory. They show since 1872 a rapid decline in the former, and an equally rapid advance in the latter. The figures are as follows:

Commercial movement of rolled iron, except rails, for five fiscal years.	1871. Net Tons.	1872. Net Tons.	1873. Net Tons.	1874. Net Tons.	1875. Net Tons.
Imports of bar, boiler, band, hoop, sheet and scroll iron.....	126,263	145,324	107,234	44,983	32,404
Exports of bar, boiler, band, hoop and sheet iron and cut nails and spikes.....	2,778	2,450	3,450	6,421	11,722

PRODUCTION OF BESSEMER STEEL IN THE UNITED STATES IN 1874. The eight completed Bessemer steel establishments in this country were not fully occupied in filling orders during 1874. Nevertheless, the product of the year was greater than that of 1873. The production of Bessemer steel rails in 1874 was 144,944 net tons, against 129,015 net tons in 1873—a gain of 15,929 tons. The production of Bessemer steel rails in this country since 1867, when they were first made upon orders, has been as follows in net tons:

1867.....	2,550	1871.....	38,250
1868.....	7,325	1872.....	94,070
1869.....	9,550	1873.....	129,015
1870.....	34,000	1874.....	144,944

Full details of the Bessemer steel industry in this country in 1874 are as follows, in net tons:

Tons of pig iron converted in 1874.....	204,329
Tons of ingots produced in 1874.....	191,933
Tons of merchantable steel produced in 1874.....	176,579
Tons of rails produced in 1874.....	144,944
Tons of other merchantable steel produced in 1874.....	31,635

The 31,635 tons of merchantable steel other than rails were used in the manufacture of spring and bar steel, railway axles, crowbars and other railway tools, wagon and carriage tires, machinery and steamboat forgings, etc. Below is a table of the annual production in this country of merchantable Bessemer steel for all purposes, from 1867 to 1874, in net tons:

1867.....	3,000	1871.....	45,000
1868.....	8,500	1872.....	110,500
1869.....	12,000	1873.....	129,015
1870.....	40,000	1874.....	176,579

The total quantity of pig iron converted by the Bessemer or pneumatic process was 140,404 net tons in 1872, 183,534 tons in 1873, and 204,329 tons in 1874.

The Edgar Thomson Steel Company, Limited, made their first blow on Thursday, August 26 last, started their blooming mill on Friday, August 27, and rolled their first rail on Wednesday, September 1. The works will at once go into full operation. This company makes the ninth that is now engaged in making Bessemer steel rails in this country. The Lackawanna Iron and Coal Company will follow before the close of this year. The foundations of the Bessemer plant of the Vulcan Iron Works, at St. Louis, have just been laid.

The quantity of Bessemer steel ingots made in the United Kingdom during the past five years is stated as follows, by competent authority, in gross tons: In 1870, 215,000 tons; 1871, 329,000; 1872, 410,000; 1873, 496,000; 1874, 540,000. We give these figures for comparison with our own achievements in building up the Bessemer industry, and that we may call attention to the fact that when the three new Bessemer establishments are all put in operation—making eleven in all—the capacity to produce Bessemer steel will be as great in this country as it now is in Great Britain.

The Bethlehem Iron Company and the Cambria Iron Company have made arrangements to manufacture spiegel-eisen—each company using one small furnace for this purpose. The ores to be used are obtained at present from Spain—Bethlehem importing from Palomares and Cambria from Carthagena. These ores are rich in iron and manganese, and practically free from phosphorus. The Bethlehem Iron Company commenced to make spiegel-eisen early in August. The quantity of spiegel-eisen now manufactured in this country forms but a small fraction of the total requirements of our Bessemer works, the remainder being imported. A great European war or some other disturbing cause may at some time interrupt the foreign supply, and this consideration alone, if no other existed, shows the wisdom of the policy of making all the spiegel-eisen we may need. But this policy cannot be fully established until we develop within our own borders the ores necessary to produce spiegel-eisen.

The imports of steel rails from all countries into the United States in the calendar year 1874 were 100,486 net tons, against 159,571 tons in 1873, and 149,786 tons in 1872. Prior to 1872 the imports of steel rails were not separately classified, and there is consequently no record of the quantity imported. In the following table we give in net tons the production and importation of steel rails during the past three years, the combined figures indicating the consumption in those years:

	1872.	1873.	1874.
Production of Bessemer steel rails.....	94,070	129,015	144,944
Importation of Bessemer steel rails.....	149,786	159,571	100,486

Consumption of Bessemer steel rails..... 243,856 288,586 245,430

Thus far during 1875 we have imported very few steel rails, owing to the fall in prices and the increase in duties, and all American Bessemer works are therefore remarkably active. It is not improbable that we will produce this year fully 250,000 net tons of steel rails.

The average price in currency at which American steel rails have been sold at the works since the establishment of the industry is shown in the following summary:

1867.....	\$160 00	1871.....	\$102 50
1868.....	158 50	1872.....	113 00
1869.....	132 25	1873.....	120 50
1870.....	106 75	1874.....	94 25

The prices obtained at the works thus far during 1875 have averaged about \$75.

General Railroad News.

PERSONAL.

—It is said that Gen. Edward F. Winslow, now Receiver of the Burlington, Cedar Rapids & Minnesota, will retire from the Presidency of the St. Louis & Southeastern Company shortly, and will be succeeded by Gen. James H. Wilson, now Vice-President. Other changes are spoken of also.

—Mr. John Anderson, who died recently in New Brunswick, N. J., had been a locomotive engineer for more than 30 years, and had, for the whole of that long period, remained upon the same road, in the employ of the Camden & Amboy Company and of the Pennsylvania since the lease. Such long periods of service on the same road are not common, in this country at least.

ELECTIONS AND APPOINTMENTS.

European & North American.—At the adjourned annual meeting in Bangor, Me., Sept. 16, the following directors were chosen: G. K. Jewett, Arad Thompson, W. G. Drummond, Elias Merrill, H. Woods, O. W. Davis, Jr., J. W. Emery, George E. B. Jackson, E. R. Burpee, James R. Ruel, Robert Robinson, E. N. Skinner, E. D. Jewett.

Milwaukee, Lake Shore & Western.—Mr. F. W. Rhinelandt has been appointed Receiver in a suit begun by the bondholders. He is President of the company.

Chicago & South Atlantic.—At the annual meeting in Chicago, Sept. 14, an entire new board was chosen, as follows: John T. Richardson, Delphi, Ind., and Caleb Crosswell, Chicago, to serve three years; Enoch Rinehart, Delphi, Ind., and Sam. S. Atwater, Chicago, to serve two years; L. B. Sims, Delphi, Ind., Wm. S. Raymond, Monticello, Ind., and Robert Rae, Chicago, to serve one year. The board elected Wm. S. Raymond President, and Robert Rae Vice-President.

Ohio & Mississippi.—Mr. D. H. Conklin has been appointed Superintendent of the Springfield Division. He was formerly Superintendent of the Gilman, Clinton & Springfield road.

Illinois Midland.—Mr. R. G. Hervey, President of the company, will act as Superintendent under the Receiver, Colonel Dole.

Pittsburgh, Washington & Baltimore.—At a recent meeting of the board Mr. John King, Jr., Vice-President of the Baltimore & Ohio, was chosen a director of this company in place of Mr. Israel Cohen, deceased, and subsequently elected President in place of Mendes Cohen, resigned. Mr. Mendes Cohen retains his position as a director.

Nashville, Chattanooga & St. Louis.—The old officers have been re-elected for the ensuing year, as follows: President, E. W. Cole; Secretary and Treasurer, R. C. Bransford; General

Superintendent, J. W. Thomas; General Book-keeper, T. D. Flippin; Resident Engineer, R. C. Morris.

Indianapolis, Peru & Chicago.—At the annual meeting in Indianapolis, Sept. 14, the following directors were chosen: Theodore P. Haughey, Wm. Henderson, David Macy, V. T. Malott, Indianapolis; Wm. Cutting, New York. The board elected officers as follows: David Macy, President; V. T. Malott, General Manager; L. G. Cannon, Secretary and Treasurer; H. B. Smith, General Freight Agent; F. P. Wade, General Passenger Agent; E. C. Murphy, Superintendent of Transportation.

Chicago Railway Construction Company.—The Superior Court in Chicago has appointed Bradford Hancock, Receiver, in a suit brought by some of the creditors.

TRAFFIC AND EARNINGS.

Railroad Traffic.

The shipments of through freight eastward over the Central Pacific for August were as follows:

	1875.	1874.	Decrease.	P. c.
San Francisco, tons.....	3,413	4,024	611	18.2
Interior points.....	500	976	476	48.8
Total.....	3,913	5,000	1,087	21.7

The principal items this year were 1,171 tons wool, 897 tons tea, 577 tons salmon and 249 tons wine and brandy. The Utah Central and Southern roads report freight tonnage for August as follows:

	1875.	1874.	Decrease.	P. c.
Utah Central, tons.....	8,863	10,718	1,855	17.3
Utah Southern.....	6,216	8,596	2,380	27.7
Totals.....	15,079	19,314	4,235	21.9

The principal item of freight on the Central was 2,547 tons coal and coke; on the Southern, 2,588 tons ore and bullion.

Coal Movement.

Coal tonnages for the week ending Sept. 11 are reported as follows:

	1875.	1874.	Inc. or Dec.	P. c.
Anthracite.....	562,659	476,763	Inc..	86,906 18.3
Semi-bituminous, Broad Top and Clearfield.....	9,115	.....	.....	.....
Cumberland.....	69,130	.....	.....	.....
Bituminous, Barclay.....	7,776	.....	.....	.....
" West'n Pennsylvania.....	13,855	.....	.....	.....
" West Virginia.....	3,598	.....	.....	.....

The coal tonnage of the Pennsylvania Railroad for the last three days of August was as follows:

	Tons.
Anthracite.....	7,117
Bituminous.....	22,331
Coke.....	6,790
Total.....	36,138

Railroad Earnings.

Earnings for various periods have been reported by the following companies:

Year ending June 30:

	1874-75.	1873-74.	Inc. or Dec.	P. c.
Nashville, Chattanooga & St. Louis.....	\$1,680,826	\$1,876,632	Dec..	\$195,806 10.4
Expenses.....	1,151,954	1,343,757	Dec..	191,803 14.3
Net earnings.....	\$528,872	\$532,875	Dec..	\$4,003 0.8
Earnings per mile.....	4,915	5,487	Dec..	572 10.4
Per cent. of expenses.....	68.53	71.60	Dec..	3.07 4.3

Eight months ending August 31:

	1875.	1874.	Inc. or Dec.	P. c.
Midland of Canada.....	\$187,724	\$205,206	Dec..	\$17,482 8.5
Month of July:				
Louisville, Cincinnati & Lexington.....	\$79,798	.....	.....	.....
Expenses.....	68,824	.....	.....	.....
Net earnings.....	\$10,974	.....	.....	.....
Earnings per mile.....	231	.....	.....	.....
Per cent. of expenses.....	86.25	.....	.....	.....

Month of August:

	1875.	1874.	Inc. or Dec.	P. c.
Ohio & St. Louis.....	\$23,874	.....	.....	.....
Penn. & Rock Island.....	30,141	.....	.....	.....
Expenses.....	16,736	.....	.....	.....
Net earnings.....	\$13,405	.....	.....	.....
Per cent. of expenses.....	55.52	.....	.....	.....

Fourth week in August:

	1875.	1874.	Inc. or Dec.	P. c.
Denver & Rio Grande.....	\$9,584	\$10,601	Dec..	\$1,017 10.3

First week in September:

	1875.	1874.	Inc. or Dec.	P. c.
St. Louis, Iron Mt. & So.	\$89,599	\$67,484	Inc..	\$22,115 32.8

Week ending August 27:

	1875.	1874.	Inc. or Dec.	P. c.
Great Western.....	\$15,207	\$18,300	Dec..	\$3,093 11.4

Week ending August 28:

	1875.	1874.	Inc. or Dec.	P. c.
Grand Trunk.....	\$36,400	\$40,200	Dec..	\$3,800 9.5

Petroleum Movement.

The Oil City Derrick reports the total petroleum movement from the producing regions for the month of August as follows:

	Bbls.
By Allegheny Valley Railroad to Pittsburgh.....	103,342
By Atlantic & Great Western to all points.....	110,098
By Dunkirk, Warren & Pittsburgh to all points.....	81,760
By Lake Shore & Michigan Southern, and from Harrisville to all other points.....	312,628
By Oil Creek & Allegheny River Railway, West Penn. Railroad and Allegheny Valley Railroad to all other points.....	284,189
Total for August.....	891,927
Total for eight months ending with August.....	5,325,050

Flour and Grain Movement.

For the week ending Sept. 11 receipts and shipments are reported as follows, flour in barrels and grain in bushels:

	1875.	1874.	Inc. or Dec.	P. c.
Flour:				
Lake ports' receipts.....	70,722	102,484	Dec..	31,762 31.0
" shipments.....	115,453	119,295	Dec..	3,762 3.2
Atlantic ports' receipts.....	172,762	224,525	Dec..	51,763 23.1
Wheat:				
Lake ports' receipts.....	1,633,016	1,469,951	Inc..	163,065 11.1
" shipments.....	1,438,390	1,498,511	Dec..	60,121 4.0
Atlantic ports' receipts.....	1,268,882	1,485,460	Dec..	216,578 14.6
Grain of All Kinds:				
Lake ports' receipts.....	3,747,319	3,105,478	Inc..	641,841 20.7
" shipments.....	3,829,607	3,441,377	Inc..	388,230 11.3
Atlantic ports' receipts.....	3,316,691	2,329,662	Inc..	989,029 42.4

Although the movement of grain of all kinds is much greater than last year, it is still not large, but smaller than for any year previous to 1874 until 1870. The following gives the number of bushels received and shipped for the corresponding week for a series of years:

	Lake Receipts.	Lake Shipments.	Seaboard Receipts.
1875.....	3,747,319	3,829,607	3,316,691
1874.....	3,105,478	3,441,377	2,329,662
1873.....	6,810,373	6,082,202	3,811,293
1872.....	4,566,980	5,098,287	.....
1871.....	5,065,569	3,327,468	.....
1870.....	2,332,422	2,235,334	.....

The movement of 1875 was an exceptionally large one, but the average lake ports' receipts for the week for six years have been 4,270,000 bushels, and their average shipments 4,001,000 bushels.

From the beginning of the crop year, Aug. 1, the receipts at

lake ports have been 21,951,968 bushels this year, against 23,945,518 in 1874, 34,460,098 in 1873 and 28,813,635 in 1872. There is nothing discouraging in this decrease, however; for the late harvest and the continuous rains preventing threshing since have prevented the marketing of grain.

Of the total shipments of grain from lake ports for the week, 39 per cent. went by rail in 1875, 9 1/2 per cent. in 1874, and 20 1/2 per cent. in 1873. The large proportion taken this year, while lake rates were from 2 to 2 1/2 cents per bushel, is remarkable.

The August shipments of wheat from San Francisco, all to English ports, were 26 cargoes, in all 1,499,892 bushels. Flour shipments were 47,900 barrels, of which 38,100 went to English ports, 3,200 to China, 3,200 to Central America, and the rest to Japan, the Pacific Islands and South America. For the two months of the California crop year ending August 31 the shipments were as follows, flour being reduced to wheat in the totals:

	1875-76.	1874-75.	Increase.
Wheat, bushels.....	1,968,317	1,482,567	485,750
Flour, barrels.....	81,016	69,700	11,316
Total, bushels.....	2,332,889	1,751,217	581,672

The San Francisco Bulletin estimates that the surplus for export from the California wheat crop of this year will be about 11,700,000 bushels.

ANNUAL REPORTS.

Kansas Pacific.

This company owns a line from Kansas City, Mo., westward to Denver, Col., 639 miles, with a branch from Lawrence, Kan., to Leavenworth, 34 miles, 673 miles in all. It controls and virtually works the Denver Pacific, from Denver to Cheyenne, 106 miles; the Denver & Boulder Valley, from Hughes, Col., to Boulder, 27 miles; the Arkansas Valley, from Carson, Col., to West Las Animas, 56 miles; the Junction City & Fort Kearney, from Junction City, Kan., to Clay Center, 34 miles; a total of 223 miles. The accounts of these lines are kept separately.

Since the close of the fiscal year, Dec. 31, 1874, an agreement of consolidation with the Colorado Central Company has been entered into, which, by its terms, will materially change the capital account of the company. A summary of this agreement was published in the Railroad Gazette for May 1, 1875.

The property of the company is represented as follows:

Stock (\$14,889 per mile).....	\$10,000,000
Funded debt (\$31.121 per mile).....	20,944,000
Government subsidy (\$9.361 per mile).....	6,300,000
Total (\$55.341 per mile).....	\$37,244,000

The company is also liable for \$1,125,000 Arkansas Valley and \$600,000 Junction City & Fort Kearney bonds.

The report says: "Very satisfactory progress has been made in carrying out the compromise between the company and the bondholders. In pursuance of the terms of the agreement, the company resumed the payment of interest as agreed upon in November, 1874, and a large majority of every class of its bonds have been already funded, and the process is still going on, indicating clearly that the bondholders in Europe, as well as in America, are satisfied of the wisdom of the arrangement made between their representatives and the company. It is hoped that the small minority which has refused to accept the arrangement will ere long abandon their hostile attitude and enable the company to bring the funding operation to a close."

"The whole amount of service rendered the Government unsettled up to date, is \$626,095.04. A suit, specially authorized by Congress, is now pending in Court of Claims to determine whether or not the Government is entitled to retain more than one-half of earnings on Government business. We confidently expect the decision in this matter will put about \$300,000, 50 per cent. of the amount already earned and retained by the Government, in your treasury. The Government has instituted a suit against your company in the past month for five per cent. of the net earnings, which the law provides that it is entitled to after the completion of the road. Under the late decision made by the Supreme Court of the United States, in the case of St. John vs. The Erie Railway Company, we do not anticipate any call upon your treasury in consequence of this claim."

Under the agreement mentioned, one-half of each coupon falling due, except on the income bonds, is paid in cash and the balance is funded. The income bonds amount to \$4,275,350. The report also refers to the agreement with the Colorado Central and Union Pacific companies.

The earnings of the road owned, for the year, were as follows:

	1874.	1873.	Inc. or Dec.	P. c.
From passengers.....	\$1,077,844 27	\$1,189,703 24	Dec..	\$111,858 97 9.4
Freight.....	1,935,439 55	2,023,063 02	Dec..	87,623 47 4.3
Miscellaneous.....	142,146 08	145,267 73	Dec..	3,121 65 2.1

	1874.	1873.	Inc. or Dec.	P. c.
Total ordinary business.....	\$3,155,429 90	\$3,358,033 99	Dec..	\$202,604 09 6.0
Less.....	201,390 05	205,265 60	Dec..	3,945 45 1.9
Govern't business.....	201,390 05	205,265 60	Dec..	3,945 45 1.9

Total earnings.....\$3,356,749 95

Working expenses.....\$3,563,299 49

Net earnings.....\$1,686,704 38

Gross earnings per mile.....4,987 74

Net earn. per mile.....2,504 76

Per cent. of exp's.....49.78

The net earnings this year amounted to 8.05 per cent. on the bonded debt. The business of the company, both in transportation and land sales, was seriously affected by the grasshoppers and the drouth. The former especially gave a serious check to immigration and settlement on the line of the road.

The earnings and expenses of the Junction City & Fort Kearney road were as follows:

	1874.	1873.	Inc. or Dec.	P. c.
Gross earnings.....	\$26,525 51	\$17,336 39	Inc..	\$9,189 12 53.1
Expenses.....	14,024 94	12,154 35	Inc..	1,870 59 15.3

Net earnings.....\$12,500 57

Gross earnings per mile.....780 16

Net ".....367 67

Per cent. of expenses.....53.89

The road-bed and track are in very good condition, and will require but little repair for some time to come.

The operations of the Arkansas Valley road were as follows:

	1874.	1873.	Inc. or Dec.	P. c.
Earnings (\$976.24 per mile).....	\$54,669 45	.....	.....	.....
Expenses (50.05 per cent.).....	27,359 77	.....	.....	.....
Net earnings (\$476.67 per mile).....	\$27,309 68	.....	.....	.....

This road was opened only for three months in 1873. The earnings of both these lines were exceedingly light. The total net earnings of the line owned and the two leased lines whose earnings are given were \$1,725,514.63.

THE SCRAP HEAP.

Railroad Manufactures.

The Ranlett Car Company at Laconia, N. H., is finishing up an order for cars for the Hoosac Tunnel Fast Freight Line, and has an order for 50 freight cars for the Boston & Lowell road.

During the month of August the Cleveland Rolling Mill Company, at Cleveland, O., turned out 4,500 tons of Bessemer steel rails and nearly 1,000 tons of wire.

The New Albany (Ind.) Steam Forge has four hammers out

of five at work, and is running on a contract for 1,200 car axles.

The Southwestern Car Company at Jeffersonville, Ind., has contracts for 50 freight cars for the Lafayette, Muncie & Bloomington road, and 50 for the Alabama & Chattanooga.

The Terre Haute (Ind.) Car Works are building a number of narrow-gauge cars.

The Springfield (Ill.) Rolling Mill is in full blast, the stoppage of the puddling mill, owing to an accident to the engine, not having affected the other departments. Ground has been staked off for the erection of a new steel rail mill.

The Cleveland (O.) Review says: "The Cleveland Rolling Mill Company have completed their gas well, and are already running one of the sheet furnaces in their plate mill, by the use of the gas, at a saving of nearly 50 per cent. in fuel. The apparatus used is of the simplest character, and requires no change or addition to the furnace, aside from the introduction of the gas pipe. The well from which the gas comes has a total depth of 1,305 feet; gas was struck at a depth of from eight to nine hundred feet, but the sinking was continued, in the hope of striking an abundant supply; this, however, was not realized, and the supply is barely sufficient to run the one furnace. At the depth of about 800 feet, a bed of hard rock was struck over 300 feet in thickness; it was not supposed that any such obstacle would present itself, and our geologists are somewhat at a loss to account for its existence in that locality. The mill company proposes sinking other wells for use in their furnaces."

The Glasgow Iron Company is the name of a new company just organized by several capitalists and iron manufacturers of Philadelphia and Berks County, Pa. The company will build rolling mills at Glasgow, on the Manatoway Creek, near Pottstown, Pa. The officers are as follows: President, Joseph L. Bailey; Treasurer, Comly B. Shoemaker; Secretary, G. W. Nicolls; General Manager, Edward Bailey; Directors, Joseph L. Bailey, Comly B. Shoemaker, Samuel A. Bacon, Edward Bailey, Benjamin Shoemaker. The capital stock is \$150,000.

Quick Work in Car-Building.

The Altoona (Pa.) Tribune of recent date says: "There were recently built at the car shops of the Pennsylvania Railroad Company, in this city, three postal cars, under the following circumstances: The order for the cars was given at the shops on Saturday, Aug. 28; the following Wednesday afternoon all were erected and had received a coat of paint. On the Monday following the cars were completed inside and out, with the exception of the outside painting. This, however, was finished, and the cars ready to proceed to destination on Friday evening, and left for Jersey City the next morning, Sept. 11, as second section of day express, running to Harrisburg, a distance of 132 miles, in 3 hours and 26 minutes without a stop, from thence proceeding to their destination without detention, none of the journals having heated, evidencing that the work was not only quickly but well done. During the same interval three cars were overhauled and fitted for the purpose of acting as tenders to the distributing cars. The postal cars are 64 1/2 feet long, 9 feet 4 inches wide. The interior arrangement consists of numerous distributing pigeon holes of different sizes, the smaller ones numbering 700 to each car, and are fitted with reversible bottoms with labels on each end, the case being made of pine, faced with black walnut. The other boxes are larger and arranged so that when full the contents can be taken out from the back. There is also an office in each car, containing a writing desk, and chairs which are convertible into a bed, if needed. The foregoing, in connection with closets, &c., make up the inside arrangements. The exteriors of the cars are painted white, varnished and lettered with gold leaf, the medallion in the centre containing a finely executed painting of the consulate seal of the United States. When it is taken into consideration that these cars are entirely different from any that have heretofore been built, and that the material had to be selected from the lumber yard and the plans made as the work progressed, we may safely say that it is a feat in car building without precedent."

American Locomotives in Russia.

A consular report from Russia says: "The first ten locomotives were imported to St. Petersburg in 1873 from the Baldwin Locomotive Works of Philadelphia, followed by twenty more from the same firm, and last Summer fifty more were contracted for at the Grant Factory in New Jersey. The great moment of this incipient trade will be apparent from the fact that there is an immense field here open for their import for many generations to come, the railroad lines to Russia having just begun to develop on a greater scale, those in operation hardly reaching to 18,000 English miles up to this day. The small locomotives heretofore built in Russia, at the rate of 100 or 120 only a year, also those imported from Germany, France and Belgium, were all built for consumption of wood for fuel till the agent of the Philadelphia firm had brought the attention of the consuming departments to the fact that anthracite coal of best quality can be found around the town of Woreneak, in Southern Russia, extending over 180 miles, and that whole regions were abounding with it in the southern half of the empire, sufficient to feed the locomotives of the whole continent. The American locomotives finally accepted and introduced here, being expressly built for coal consumption only, have led Russian capital to the development of the now quite numerous coal mines in the district named. On account of the faultless finish of the American locomotives and their superior power, guaranteed to haul on a level 1,075 tons, in lieu of those heretofore in use, hauling but 650 to 700 tons, they are much preferred, as the higher price paid for them (namely, 25,000 silver rubles apiece, instead of 18,000 to 20,000 silver rubles paid for those brought in from Germany and Austria) would indicate."

Religion for Railroad Men.

The Boston Journal, of September 6, says: "A meeting of gentlemen interested in the organization of a railroad praying band for the purpose of awakening a religious interest among railroad men was held in the library room of the Boston & Albany Railroad in this city, on Saturday evening. Bro. J. Hatch, President of the Springfield band, which was organized about a year ago, was present, and presided. Mr. J. Howell acted as Secretary. A constitution presented by Mr. B. C. Crabtree was adopted, and officers chosen as follows: President, B. C. Crabtree; Secretary, C. W. Capel; Treasurer, W. H. Swallow. The band will consist of railroad men as follows: Engineers, conductors, freight clerks, shop men and agents from different departments. Remarks were made by Messrs. Hatch, Crabtree and others, and a very enthusiastic spirit was manifested."

Stealing Hats.

Probably every one who has traveled by rail has noticed the fact that when a train stops at a station the first impulse of the average traveler is to put his head out of the window. A certain young man in Newark, N. J., had remarked this and had also noted the fact that at the Market street depot in that city the east-bound track runs outside of the depot and is separated from the street by a high picket fence. Putting the two facts together and taking two confederates, they watched until a train approached, then climbed on the fence, and as the train halted and the heads began to be protruded from the windows, each grabbed two or three of the nearest hats, jumped from the fence and disappeared through an alley near by. This went on until the party had accumulated quite a respectable stock of hats, when the complaints of hatless travelers reached the station-master, a detective was set at work, and the plunderers were caught in the act.



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Editorial Announcements.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

THE MORRIS & ESSEX TUNNEL.

It may not be known to some of our readers that all the traffic of both the Erie and the Delaware, Lackawanna & Western Railroad which reaches and leaves New York now passes through what is known as the Bergen Tunnel, which belongs to the Erie Railway Company. It may perhaps be necessary to explain still further to those not familiar with the topography of the country westward of and opposite to Manhattan Island, that this tunnel is through what is known as Bergen Hill, which is a ridge composed chiefly of trap rock extending north and south, and nearly parallel with the North or Hudson River. Opposite to New York it is about a mile west of the river. It is the same range which higher up forms the celebrated Palisades. At the point where the tunnel pierces this range, the ground on both sides of the ridge is low and marshy. The depot and the ferry landing of the Erie road on the western side of the North River are in Jersey City, while those for the Delaware, Lackawanna & Western are in Hoboken, about a half mile further north than the terminus of the Erie road. The line of the latter, from the ferry landing to the mouth of the tunnel, with the exception of a curve at the mouth of the tunnel, is a straight line, as shown in our rough map on the next page. The line of Delaware, Lackawanna & Western Railroad, however, it will be seen, is a very tortuous one on each side of the tunnel. Owing to the sharp curves and also to the fact that in Hoboken and Jersey City the road occupies the same grade as the streets, it is dangerous to run trains at a high speed over this portion of the line. As all the traffic of both of the roads named passes through the tunnel over two tracks, and as the number of local trains for the accommodation of what may be called suburban inhabitants who do business in New York is very large on each of the roads, it is very difficult at certain hours of the day to pass all the trains through promptly. For years the delays at the tunnel have been a cause of vexation and annoyance to people who are obliged to travel over this portion of the Delaware, Lackawanna & Western road. So serious has this been—and still is—that it is said by dealers in real estate that property along the line of this road is worth from 25 to 50 per cent. less than property of the same character along the line of the Central of New Jersey, which also does a very large suburban business. The difference is said to be entirely due to the greater facilities of travel offered by the latter road. Although the difference is not all due to the tunnel, yet it has been one of the chief causes, if not the greatest, of annoyance to the passengers. It is therefore not remarkable that the Delaware, Lackawanna & Western Company should be led to provide better facilities for ingress and

egress to and from their eastern terminus. A few years ago therefore it located a new line, which is represented by heavy lines on our diagram. This made the construction of a new tunnel necessary very near the old Bergen tunnel, as it is called, of the Erie road. It will be noticed that the new line crosses the Erie road very near the western entrance to the old tunnel. It also crosses three streets and a branch of the Erie road east of Bergen Hill and two streets and two railroads west of the hill. These are not represented in our rough map. This made it necessary to raise the grade of the new line enough to bridge over all of these crossings. At the same time, by adopting this plan, it was possible to get a straight line from the depot in Hoboken for nearly three miles, or to a point at which it meets the old line of the road, and where the latter is laid alongside and parallel to the Pennsylvania line over the Hackensack marshes. By this means the distance is shortened 3,550 feet, or more than two-thirds of a mile. This diminution of the length of the road, and the increased speed at which trains can run on the new line, with the greater facilities offered by the new tunnel in avoiding detentions, will, it is thought, reduce the running time of trains between Hoboken and Newark at least ten minutes.

As the line starts from the ferry, which is only a few feet above tide, it is necessary, in order to cross the Erie road, to carry this new line up on a grade which in the tunnel rises towards the western end at the rate of 15 feet per mile. The summit of the grade is at or near the western portal of the new tunnel, which is quite near that part of the old Erie or Bergen tunnel, but high enough above it to cross the Erie road on a bridge, at a height of 15 feet above tide.

The excavation for the tunnel itself will be 4,209 feet long, not including the approaches, but the total length from face to face of the portals, when the latter are completed, will be 4,270 feet. It will be constructed for two tracks, and the form of the cross-section at the point where it is arched is shown by fig. 2. When the rock does not require arching, the roof is made flatter, the cross-section of which would be represented if the two curves of 9 feet radius on each side were joined by a straight line drawn tangent to them. But a comparatively small amount of arching is required, as the rock is very solid and compact.

Work was originally carried forward from six shafts, which will be used hereafter for ventilation. For the latter purpose, towers will be erected over each one of them. These towers will be of uniform height measured from the road-bed to their tops. The six shafts and the two outside ends of the tunnel gave fourteen faces to work on, and divided the work up into seven sections. As the excavation is completed, or nearly so, of four of the sections, there are six faces only at which work is carried forward. Between shafts 3 and 4 there remains 305 feet of heading to be done; between 4 and 5, 228 feet; and between 5 and 6, 109 feet; and in all about 1,450 feet of bottom or bench work still to be removed.

Although the rock is very hard to drill, it has been thought by the contractors to be more economical to have all the drilling in the headings done by hand than by steam drills. After the headings are driven, steam drills are, however, employed in removing the benches. Ingersoll drills are employed, driven by air, which is compressed by one of Waring's compressors. The reason why hand-drilling has been found cheaper than machine work is because of the expense of the fixtures necessary to work the drills in the headings, whereas in the benches nothing but a tripod is needed for them to work on. For bench work, steam drilling is also found to be advantageous, because the holes are larger and deeper than those made by hand, so that larger quantities of rock can be removed by a blast than is possible by hand-drilling.

The explosives used are what is called "rend-rock," ordinary blasting powder and Warren's powder. "Rend-rock" is said to be composed of paper pulp, nitro-glycerine and ordinary powder, and is made of different grades. No. 2 is the grade used in the Morris & Essex tunnel. The trap rock through which the tunnel is excavated is, as we stated before, difficult to drill, but is easily blasted. About 600 men are kept at work on the tunnel, and it is reported that it will cost about \$800,000.

Besides the tunnel the construction of the new line requires a great deal of other important work. There are, as we have already said, eight crossings of streets and railroads, each of which must be bridged. Besides these, there is a bridge with a draw across the Hackensack River, the whole length of which will be 600 feet. The draw is to be 200 feet long from the center of its middle pier to each end. As the Hackensack River flows through the marshes, at the point where it is crossed the foundation of this bridge must be constructed with great care, as the material of which the bed and banks are composed consists of alluvial mud of very great depth. Piles about 70 feet long are therefore first driven for the piers in the river. These piles are then sawed off about 9 feet under water, and the mud is removed by a diver for some distance below the tops of the piles and the spaces

between filled in with concrete. A wooden coffer-dam is then constructed and sunk over the tops of the piles and rests on top of the concrete. The masonry is built in the coffer-dam after it is sunk and rests on the timber bottom. The piers on the two banks are similarly constructed, but, not being under water, present fewer difficulties than those in the stream.

The greatest difficulty in securing good foundations, however, is experienced east of Bergen Hill. As the grade of the road is there over the streets, a considerable embankment is necessary to make the grade high enough to bridge over the streets. The material removed from the eastern end of the tunnel was therefore used to construct this embankment. It was found, however, after the embankment had extended out over the marsh for some distance, that it sunk down at the bottom somewhat faster than it could be filled up on the top. It was also found that as the embankment sank the earth near it began to rise. At the present time, it is about 9 feet higher than the original surface of the ground, and is raised up for a distance of about 150 feet on each side of the embankment, and looks as if it had been convulsed by an earthquake. One of the piers for a bridge over the street, although built on piles about 70 feet long, has begun to sink, but whether it will continue to do so is of course impossible to tell now. This portion of the work is giving the engineers so much trouble that we are inclined to believe that they are beginning to suspect that the cause of the difficulty must be attributed to the perfidy of the Heathen Chinee, who may be removing the bottom of Hoboken on the other side.

Besides the new line of road and tunnel, this company is constructing a canal or dock which, when completed, will be 600 feet long and 90 feet wide. The tracks and terminal facilities are all to be rearranged and improved so that vessels can lie in the dock and be loaded from the tracks on either side. The whole cost of the improvements now in process of construction will be about two and a half millions of dollars, including the cost of real estate, right of way, etc. The work is under the charge of Mr. James Archbald, Chief Engineer of the line. Mr. Samuel Rockwell is Resident Engineer, with Mr. E. L. Jenks as Assistant. The contractor of the work is Mr. John McAndrew. The work was begun in September, 1873, and, it is thought, will be completed in July, 1876.

British and American Railroad Dividends.

Herapath's Journal compiles from the Board of Trade returns the following account of the amount of stock and bonds on which the different rates of dividend and interest were paid in 1874. By this it appears that the funded debt on which no interest was paid amounted to only about \$2,500,000—which is by no means so imposing a figure as the United States can show—something like \$500,000,000. But hardly less striking is the difference in the non-dividend paying stock shares: Great Britain in 1874 had about \$240,000,000 of such shares; more than half of the \$1,990,000,000 capital stock of the railroads of this country paid no dividend during the same year. Notwithstanding this, the British share capital is larger by two fifths than the American. This vast amount of share capital is accounted for by the comparatively small proportion of funded debt. The latter is but about 26 per cent. of the total capital, while in the United States the share capital is more than 55 per cent. This goes far to account for the low rates of interest paid for loans by the British companies. Evidently a company which pledges a hundred dollars' worth of property for a loan of \$26 ought to get it on better terms than one that raises \$55 by loan on the same amount of property. The margin for security is as 74 to 45 in favor of the first-named borrower.

The table of dividends as given by *Herapath* is as follows:

Ordinary.	Guaranteed.	Preferential.	Rate per cent. of dividend paid.
\$1,121,014	7,326,169	Nil.	Nil.
6,206,133	128,250	Not exceeding 1 per cent.	P. c.
9,842,656	101,180	Exceeding 1 and not exceeding 2	"
12,969,911	2,824,334	" 2	" 4
27,310,302	9,844,025	" 3	" 5
32,539,999	44,253,850	" 4	" 6
34,725,240	9,799,830	" 5	" 7
55,507,555	3,311,580	" 6	" 8
2,287,417	380,000	" 7	" 9
18,190,305	440,570	" 8	" 10
1,029,326	50,000	" 9	" 11
1,110,000	225,275	" 10	" 12
9,087,960	2,000	" 11	" 13
30,000	.....	" 12	" 14

The interest paid on the funded debt for the same year

Loans.	Debt stock.	Rate per cent. of interest paid.
\$8,000	514,974	Nil.
.....	281,821	Not exceeding.....
20,785	194,500	Exceeding 1 and not exceeding 2
20,546,371	87,623,502	" 3
19,184,310	49,828,146	" 4
489,525	2,760,548	" 5
.....	18,000	" 6
3,099	.....	" 7

Thus, much more than half of this debt pays not more than 4 per cent. interest, while an American company with the very best of credit and strongest position is counted lucky if it can borrow at 6 per cent.

For purposes of comparison we have compiled below

from the returns in Poor's Manual for last year a table giving the amount of stock on which each of the various rates of dividends were paid by the companies of the United States:

1 company paid 1 1/2 per cent. on.....	\$20,503
1 " " 2 1/2 " "	4,292,000
5 companies paid 3 " "	9,171,000
2 " " 3 1/2 " "	51,966,979
2 " " 4 " "	8,842,000
9 " " 5 " "	38,780,210
1 " " 5 1/2 " "	15,520,180
22 " " 6 " "	1,215,869
1 " " 6 1/2 " "	77,353,193
23 " " 7 " "	3,200,000
2 " " 7 1/2 " "	99,882,057
24 " " 8 " "	20,068,000
5 " " 8 1/2 " "	199,191,770
31 " " 9 " "	6,200,260
1 " " 10 " "	291,699,710
1 " " 11 " "	300,000
2 " " 12 " "	1,606,800
1 " " 12 1/2 " "	23,500,000
1 " " 13 " "	2,759,791
1 " " 20 " "	5,000,000
1 " " 25 " "	180,000

144 companies paid dividends from 1 1/2 to 25 per cent. on \$845,590,692

The total capital stock reported by Poor is \$1,990,997,486, so that the amount on which no dividend was paid was \$1,145,406,794—57 per cent. of the whole.

The American companies seem to avoid making very small or irregular dividends. Of the whole amount paying dividends nearly four-fifths paid 6 per cent., 7, 8 or 10 per cent. Considerably more than half paid 8 or 10 per cent., 24 per cent. paid 8 and 34 1/2 per cent. paid 10 per

cent. one of the events of the day, to which press and people have given a large share of their attention. Doubtless the readers of the *Railroad Gazette* will not be less interested than the rest of their countrymen in this superlative effort of American railroads, wherefore the following account of the first trip from New York to Chicago, by the New York Central and Lake Shore route, is commended to their attention.

This train, as our readers know, was to begin its first trip from the Grand Central Depot, in New York, at a quarter past four in the morning, on the 16th of this month. To celebrate the occasion and to record the event, the General Superintendent of Railway Postal Service, Mr. George S. Bangs, and the railroad officers, invited a considerable party of gentlemen to make the journey with the mails, for this occasion only; after which the train was to carry no passengers and none but the train-men and post-office employees could experience the sensations incident to a journey from New York to Chicago in twenty-seven hours.

Thus it happened that about four o'clock on the morning of the 16th a good car-load of gentlemen assembled at the Grand Central Depot in New York—a sleepy, yawning crowd, whom nothing but duty or a new sensation could have drawn out at that unearthly hour. Which suggests that it is hardly necessary to prohibit traveling westward by the fast mail. The men who will get up at three in the morning to take a train which will bring them to their destination about the same time as one on which they can sleep (or at least lie quiet) undisturbed all night must be few indeed. On this occasion most of the travelers sat up all night in order to take the train, which starts without reference to the comfort of anyone, at the

and taking in bags from the mail catcher, which is attached alongside. The 60-foot cars have six-wheel, the others four-wheel trucks. All are provided with both Westinghouse air brakes and Creamer spring brakes, and with Miller platforms, buffers and couplers. Perhaps the most noticeable feature visible from the outside is the inclosure of the end doors on the platform by a framework and side doors, which extend from the end of the car just outside of the car-door frame to the end of the platform, so that when two cars are coupled together there is an inclosed passage-way from the door of one to that of the other, about thirty inches wide, interrupted only by the few inches in the gap from platform to platform. As the mails, when distributed and made up in the distributing car, are wheeled on a truck from it to a storage car adjoining, these inclosed passages serve a useful purpose in sheltering those passing from cross winds, and preventing the loss of bags that might fall from the truck. They also keep out much dust and cinders when the doors are left open, as they often must be. The cars are 9 ft. 8 in. wide, and 6 ft. 9 in. high in the clear. They are painted white without, with buff borders, with the two faces of the great seal of the United States on each side of the car, and above, just under the edge of the roof, the legend, "The Fast Mail," in large letters inclosed in lines, preceded by "New York Central," and followed by "Lake Shore," in a different letter. The distributing cars are warmed by Baker's hot-water heaters. The one intended for letter mails has a little state-room for the superintendent of the route and train at one end; but the greater part of the space is occupied by two semi-circular ranges of pigeon-holes, which form the distributing offices. These extend along the car twelve or

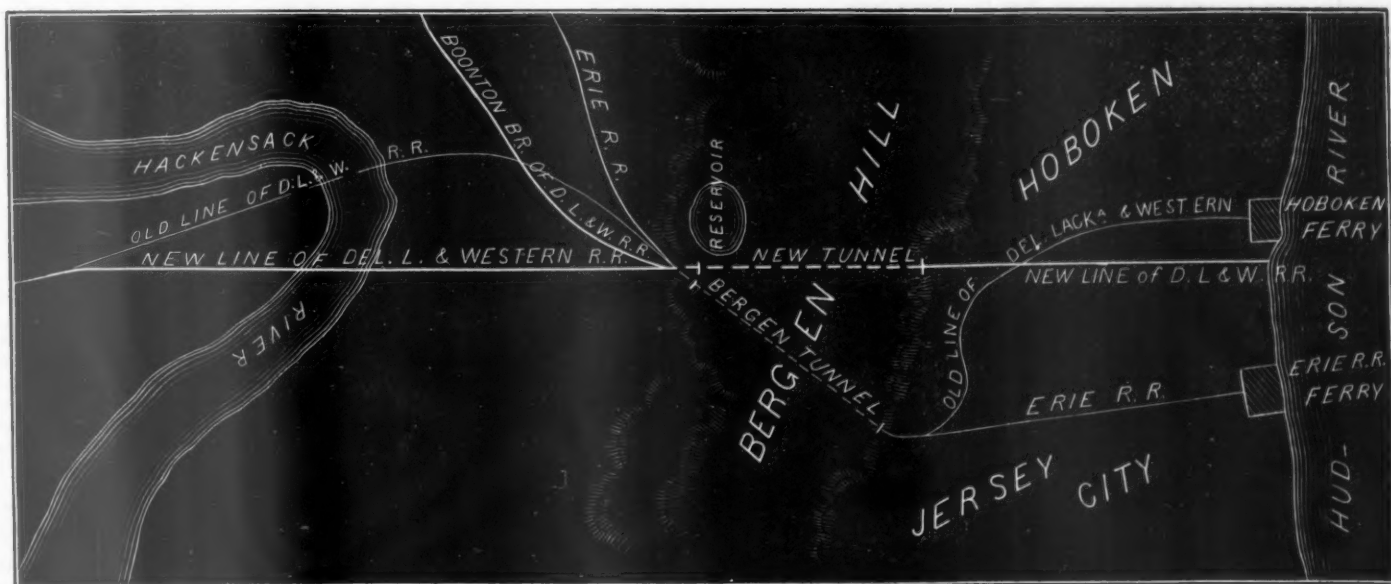


Fig. 1.

cent. About \$720,000,000 out of the entire share capital of \$1,991,000,000 received dividends amounting to 6 per cent. or more.

American railroad shares thus appear to be either very good or very poor property, with the chances largely in favor of their being very poor. A much greater amount than in Great Britain pays more than 6 per cent., but five times as much pays nothing at all. England has no corporation like the New York Central & Hudson River, paying 8 per cent. on \$89,000,000, or like the Pennsylvania, paying 10 per cent. on \$68,000,000; but it has a great many which pay 4, 5 and 6 per cent. on large amounts, and comparatively few which pay nothing.

From New York to Chicago in Twenty-seven Hours.

We Americans are called a fast people, and are said to be most impatient of any delay in our business or pleasures; but it is a notable fact that we do not travel by rail so fast as Englishmen, or even as Frenchmen and Germans do on some of their trains. Yet nowhere in the world is so much to be saved by speed; not to claim a greater value of time here, which we will hardly insist upon; for time is very valuable to some men in Europe as well as America, and there are just as valuable men there as here—not to speak of this, the great length of journeys made in the ordinary course of business in this country gives an opportunity for the saving of an amount of time impossible in the smaller European countries. That a man should shoot over the two hundred miles between Liverpool and London at 40 miles an hour seems hardly worth while; it is but an easy night's journey at half that speed; but that he should make all the haste possible over the 900 miles from New York to Chicago, the 1,100 from New York to St. Louis, or the 3,400 from New York to San Francisco is reasonable enough. The seven days required for the latter journey at 20 miles an hour would be reduced to less than five days at 30 miles, and to three and a half at 40 miles an hour, and a saving of two or three entire days is not to be despised. On very few long routes in this country is a speed of 30 miles an hour or more attained, while ordinary express speed in England is 25 to 40 miles. The reason is not far to seek. In Europe there is a larger population to pay the cost of the fast running, and also the interest on the high cost of railroads particularly adapted for such speed.

But speed is none the less appreciated in this country, as the establishment of these fast mail trains has shown. It has been

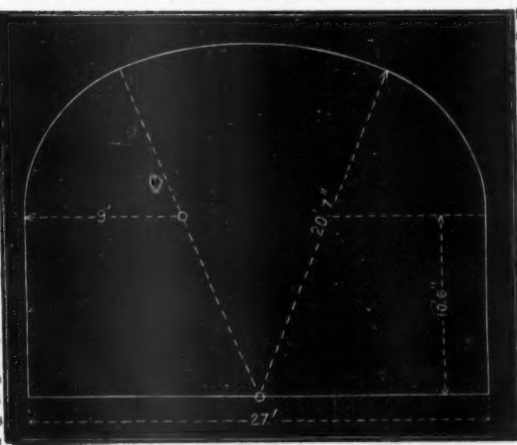


Fig. 2.

earliest moment possible after the publication of the New York morning newspapers.

The train that received these sleepy excursionists consisted of locomotive No. 57, of the New York Central & Hudson River Railroad—of the "American" pattern—four new postal cars, two fifty and two sixty feet long, for distributing and storing the mails, and the Wagner drawing-room car "Duchess" for the guests.

The postal cars were constructed during the past summer from plans supplied by the Post-Office Department especially for this service. They are not, however, greatly different from other postal cars, having provisions for distributing the letter and newspaper mails separately, for sacking them, and for catching mail bags from cranes at stations where the train does not stop. That is, two of the four postal cars in the train had such provisions; the others were simply storage cars, in which the mail bags are carried after the matter has been distributed, and with no partitions or interior furnishings whatever, except rows of slight posts on each side of the central passage way, between which the sacks are piled.

These cars are similar in construction to passenger cars, with platforms and entrances at the ends, but with comparatively few windows, very little ornament outside and none at all within, and with two side doors on each side for throwing off mail

fifteen feet, with just space enough between the outside of the semi-circle and one side of the car, and between its extremities and the other side, for a man to pass. The ranges of pigeon-holes rest on a narrow counter and open towards the interior of the semi-circle, within which the distributors, called "throwers," do their work. The division for letters has 946 pigeon holes, each labeled with the name of a post-office or of a route for which mail is to be made up separately. Four men can work at distributing in it, besides one who ties up the bundles and puts them into bags. The newspaper division in this car is chiefly for transient newspapers, the mails from the publication offices going into a separate car. Here the boxes are much larger, and form chutes, sloping backwards against doors which, when opened, permit the contents to slide down into bags hung on hooks on the outside of the semi-circle. The newspaper car has a distributing apartment for nearly half its length, with 94 boxes opening behind into mail bags hung outside, as before described. There are seven windows, 21 by 32 inches, in each car, four on one side and three on the other, besides lights in the side doors.

Of the cars in this first train two were built under the direction of Mr. Leander Garey, Master Car-Building at the Albany shops of the New York Central, and two by the Lake Shore at Cleveland under the direction of its Master Car-Building, Mr. John Kirby. Their white color makes them quite conspicuous, and easily distinguished at night, which is an advantage. The distributing cars are said to have cost \$4,200 and the storage cars \$3,300 each. There are to be twenty of these cars for this train, some of which are not yet completed. Their weight has not been given; it is probably somewhat less than that of ordinary day passenger cars of equal length. Probably the five cars in the train weighed 65 to 70 tons.

The passengers by this first train consisted, aside from the post-office employees who work in it, of Mr. Bangs and eight or ten other post-office officials, several officers of the New York Central & Hudson River Railroad Company—Mr. Worcester, the Secretary and Treasurer, Mr. Tillinghast, the General Superintendent, Mr. Toucey, the Superintendent of the Hudson River Division, Mr. Fisher, the Chief Engineer, Mr. Garey, the Master Car-Building, and, for part of the distance, Mr. Henry R. Pierson, one of the most active directors, and Mr. James M. Whitney, a director from Rochester. Then there were a steamship man and a hotel keeper or two, and two Western farmers and manufacturers; but the greater number were newspaper correspondents, from New York and Chicago and elsewhere, to whose labors it is largely due that most of

our readers (and the rest of the world) have seen the story of this train told at great length a full week before this reaches them. The newspaper men, indeed, with the post-office officials, were almost the only ones who made the journey through to Chicago. But more joined the train than left it, and indeed the one passenger car had been exchanged for three before the train reached Chicago.

The great loads of morning newspapers were not all stowed away in time, and it was two and a half minutes after starting time when No. 57 pulled the white train out of the Grand Central Depot in a dirty mist that lubricated but did not wash the rails, and made a slippery track. The "Fourth Avenue Improvement" gives, perhaps, the safest and clearest portion of the whole road within the city limits, and for the few miles south of the Harlem River the locomotive can do its best. On the other side, the short curves between Harlem Bridge and the Hudson River reduce the speed, but the swaying of the cars make it appear greater than elsewhere. The springs over the rear truck of the "Duchess" were either too weak or too low, and the car came down with a thump on the side-bearings on entering and leaving curves, and wherever else any considerable shock was received. This was not the case with the post-office cars, however, and except on the shorter curves the motion was very easy, and would hardly have suggested any unusual speed. There was a constant movement through the train. Everyone visited the postal cars, and no one kept his seat long in the Wagner car. Then as there were no rigid seats to support yourself by in passing through the car, and as, moreover, the passage was obstructed in many places by loose chairs—brought in to accommodate a company much more numerous than the regular car seats, one had to make a devious path without much support from his hands in passing through; but it was, nevertheless, easy to walk through. Altogether the riding was smooth and easy, and quite as comfortable as at lower speeds.

The speed of the train was watched with great anxiety, especially by the railroad men. The greasy mist reduced it somewhat, and Poughkeepsie, the first stopping place, 73 miles from New York, was reached a few minutes behind time. Up to this place the train was drawn by No. 57 (the one wrecked at New Hamburg when Dr. Simmons was killed) in charge of Pat Milligan.

At Poughkeepsie a new engine, No. 85, run by George Mink, took the train and hauled it to Albany. The track was now dryer, and though an extra stop was made at Hudson, Albany was reached seven minutes ahead of time. Here the passengers had ten minutes for breakfast, the engine "Wm. H. Vanderbilt," in charge of Reuben Allen, was put in place of No. 85, and the train went up the 85 feet grade west of Albany at a rapid rate, and though leaving Albany five minutes late, reached Amsterdam, 33 miles, on time, and made the next 55 miles west of Amsterdam in 57 minutes. At Palatine Bridge, 55 miles from Albany, the train was on time; at Utica, 42 miles further, six minutes ahead of time, and at Syracuse, where the Wm. H. Vanderbilt was exchanged for No. 125, Gould, engine, seven minutes ahead. There was a short delay at Clyde, owing to a hot box on the engine; and the end of the division, Rochester, was reached five minutes behind time; but the train was on time at Batavia, and thence down hill to East Buffalo it rushed at a terrible rate, arriving six minutes ahead of time. Thus the part of the trip over the New York Central & Hudson River Railroad was made in eight and one-half minutes less than the schedule time, at an average speed of 41½ miles an hour, including stops, with apparent ease, with great comfort to the passengers and entire safety. Many times between stations a speed of a mile a minute was attained, and it was said that this rate was considerably exceeded sometimes; but, as observations made by mile-posts cannot be quite accurate without a stop-watch, we cannot accept these reports as unquestionable, though they may very well be true. The road is, in some respects, the best in the country, or, perhaps, in the world, for maintaining high speed: not only is the track wholly of steel and admirably maintained, but the existence of separate tracks for freight trains from Albany to Rochester makes it safe to run at the highest speed possible to the engine. There are some straighter roads in the West, however, and the curves are apparently the chief obstacle to an increase of speed beyond that fixed by the time-table. The locomotives, of course, were not specially designed for such speed. They were those used with the ordinary express trains, which, however, have run faster on this road than on most others in this country.

Two things were especially noticeable on the trip: first, the universal interest in the train by the people along the line, which caused them to assemble in great numbers at every city station; and, second, the feeling of pride and affection manifested by the company's officers for the road and its employees. There seemed to be a warmer, more personal interest in the road than is often exhibited for material objects, aside from works of fine art—one much like that which their owners often have for fine horses, and the like, which can in some degree return the affection lavished upon them. And as the road and its equipment are largely of their own creation, and as its performances are really their own work, there is good reason for such a feeling. The fast mail is their *chef d'œuvre*, the master-work of their art in one direction, exhibited for the admiration and criticism of an entire nation: naturally they were anxious for it; rightfully they were proud of it.

Nearly all the New York Central men left the train at the end of the road, Mr. Worcester, who is Treasurer of the Lake Shore Company also, alone, we believe, continuing on westward. And at Buffalo the Lake Shore directors' car, with a number of the officers of that road and their invited guests, was attached to the train, which now consisted of six instead of five cars, so that there was heavier work on the Lake Shore than on the New York Central. But the former road has the advantage in grades and curves, and for most of the distance east of Cleve-

RAILROAD EARNINGS IN AUGUST.

Name of Road.	Mileage.					Earnings.					Earnings per Mile.	
	1875.	1874.	Inc.	Dec.	Per c.	1875.	1874.	Increase.	Decrease.	Per c.	1875.	1874.
Atchison, Topeka & Santa Fe.....	509	509				\$180,000	\$112,681	\$37,319		33.1	\$296	\$221
Burlington, Cedar Rapids & Minnesota..	424	424				112,759	116,280		\$3,521	3.0	266	274
Central Pacific.....	1,316	1,260	56		4.4	1,632,000	1,322,557	209,443		15.8	1,165	1,000
Illinois Central.....	1,109	1,109				651,302	711,969		60,667	8.5	587	642
Indianapolis, Bloomington & Western.....	344	344				103,526	144,173		40,647	28.2	301	419
International & Great Northern.....	468	458				80,778	75,503	5,275		7.0	176	165
Kansas Pacific.....	761	761				305,139	289,937	15,202		5.2	401	381
Keokuk & Des Moines.....	161	161				67,448	63,309	4,139		6.5	419	393
Lake Shore & Michigan Southern.....	1,175	1,175				1,184,500	1,414,818		230,318	16.3	1,008	1,204
Missouri, Kansas & Texas.....	786	786				272,104	289,005		16,901	5.8	346	366
St. Louis, Alton & Terre Haute—Belle-ville Line.....	71	71				40,406	50,039		9,633	19.3	569	705
St. Louis, Iron Mountain & Southern.....	685	685				287,505	254,290	33,215		13.1	420	371
St. Louis, Kansas City & Northern.....	504	504				248,886	285,920		12,916	5.5	494	468
Union Pacific.....	1,032	1,032				1,061,000	1,042,416	18,584		1.8	1,028	1,010
Totals.....	9,334	9,279	55			\$6,097,303	\$6,122,837	\$36,533	\$361,687	0.4	\$683	\$660
Total increase or decrease.....			55		0.6				25,534			

RAILROAD EARNINGS, EIGHT MONTHS ENDING AUGUST 31.

Name of Road.	Mileage.					Earnings.					Earnings per mile.				
	1875.	1874.	In.	Dec.	Per c.	1875.	1874.	Increase.	Decrease.	P. c.	1875.	1874.	In.	Dec.	P. c.
Atchison, Topeka & Santa Fe.....	509	509				\$899,128	\$787,985	\$51,143		6.5	\$1,645	\$1,548	\$97		6.3
Central Pacific.....	1,302	1,260	42		3.3	10,919,183	8,833,460	1,985,723		22.2	8,386	7,090	1,296		18.3
Illinois Central.....	1,109	1,109				4,721,373	4,903,378		\$181,905	3.7	4,237	4,421			\$164
Indianapolis, Bloomington & Western.....	344	344				770,829	1,091,261		320,432	29.4	2,241	3,172			931
International & Great Northern.....	458	416	42		10.1	732,596	717,238	15,358		2.1	1,600	1,724			124
Kansas Pacific.....	761	761				2,038,112	2,102,365		64,253	3.1	2,678	2,763			85
Keokuk & Des Moines.....	161	161				531,773	432,334	99,439		23.0	3,303	2,685	618		23.0
Missouri, Kansas & Texas.....	786	786				1,724,848	1,964,841		239,993	13.2	2,194	2,499			305
St. Louis, Alton & Terre Haute, Belle-ville Line.....	71	71				353,149	338,522	14,627		4.3	4,974	4,768	206		4.3
St. Louis, Iron Mt. & Southern.....	685	684	1		0.1	2,145,894	1,906,988	238,906		12.5	3,133	2,788	345		12.4
Union Pacific.....	1,032	1,032				7,621,427	6,456,191	1,165,236		18.0	7,385	6,256	1,129		18.0
Totals.....	7,218	7,133	85			32,398,312	29,634,663	\$3,763,649	\$806,783	9.3	\$4,489	\$4,155	\$334		8.0
Total increase.....			85		1.2										

land its track is simply unsurpassable, capable doubtless, if kept clear of trains, of as great speed as can be got out of locomotives. There is a little iron left in the road, which is not quite smooth, as iron rarely is under heavy traffic; but generally the train seemed hardly to feel the track, and the work appeared to be easy for the engine, which, indeed, seemed to be taking an easy gait and to be able to do much better, if necessary; though it made 40 miles an hour nearly all the time. On this road the train was not permitted to run ahead of time, and as we approached a station careful observation showed that almost everywhere east of Cleveland the engine man slowed his train in order to keep back to time when passing.

The railroad men who joined the train at Buffalo were Mr. Charles Faine, General Superintendent of the Lake Shore & Michigan Southern; Mr. Charles Collins, Chief Engineer; Mr. C. P. Leland, Auditor; Mr. Taylor, Superintendent of the Buffalo Division; Mr. A. C. Armstrong, Purchasing Agent, and Hon. H. B. Payne, a director. They had with them many leading citizens of the towns on their line, and several were taken up at the stopping places on the road.

At half-past seven in the evening the train reached Cleveland, where supper was had, and the drawing-room car "Duchess" was exchanged for the sleeping car "Odell," and here two parties from Chicago and Toledo were taken back in two additional sleeping cars, so that from Cleveland to Chicago there were seven cars in the train, three of them heavy sleepers.

This part of the journey was made at night, and the party from New York at least, quartered in the "Odell," had been so well qualified for sleep by their early rising that morning that their personal observations west of Cleveland are hardly worth recording—though it would take little space to record them. It was reported that there were hot boxes on some of the cars, and that something like half an hour had to be made up for delays so occasioned. There are numerous stops at railroad grade crossings on this part of the line; but the schedule speed is not very great, and the train reached Chicago on time—six minutes ahead, some one has said; but this is contrary to the practice of the road. The excursionists from New York accepted an invitation to make their home at the magnificent Palmer House, and the first fast trip was over.

The title above, "From New York to Chicago in Twenty-seven Hours," is something of an exaggeration. The actual time is 27 hours and 16 minutes; but how would that look in a title? And as in the case in question, the train actually started two minutes and a half late, and is said to have reached Chicago six minutes ahead of time, the difference is the less important. And, indeed, as we steal a march of 55 minutes on the sun in going that distance westward, the time seems to be less than it actually is, which accounts for the newspaper statements of twenty-six hours as the time of the train.

Twenty-seven hours and sixteen minutes then is the actual time prescribed for the new fast mail to make the distance from the Grand Central Depot at Forty-second street in New York over the New York Central & Hudson River and the Lake Shore & Michigan Southern roads to the Van Buren street depot in Chicago. The distance by the route actually traveled is 968 miles, and not 979, as we gave it last week. The advertisements of the Lake Shore route and its reports give the distance from Buffalo to Chicago as 539 and 540 miles respectively, and from the figures given in the railroad guides it is impossible to ascertain what the differences in the lengths of the two loop lines—from Elyria to Millbury and from Toledo Junction to Elkhart—are; but a comparison of statements given in different places shows that the old Michigan Southern road from Toledo to Elkhart is 142 miles long, and the Air Line but 132, and the southern line from Millbury to Elyria 78 miles long,

while the northern or Sandusky line is 77. Thus it is only the longest of the company's two lines which is 539 miles long from Buffalo to Chicago, the other is but 528 miles.

Thus 968 miles were to be run by the fast mail in 27½ hours. Given this problem, we say $968 \div 27\frac{1}{2} = 35.52$ miles per hour; and there we have it, and it is not much of a task either. But this is not a fair statement of the problem, which was, rather, given the 27½ hours within which we must reach Chicago after 4:15 in the morning, how shall we run so as to distribute mail and newspapers by day over the greatest extent of country? This suggests the true answer, which is, evidently, to run as fast as possible until night.

And this is what the fast train does. Taking the morning newspapers as early as possible after publication, it makes the best time it can until about half-past seven in the evening; then having the night before it, it slackens its pace for the rest of the route, only aiming to reach Chicago at the earliest hour at which its mails can be used the next morning. So from New York to Cleveland, 622 miles, the average speed, including stops, is 39½ miles an hour; while from Cleveland to Chicago, 346 miles, the average speed is but the merest trifle over 30 miles an hour. There is no object in running faster after leaving Cleveland. If the fast rate were kept up to the end of the route, the time from New York to Chicago would be 24½ hours.

But it is on the eastern part of the line that the facilities as well as the need for speed are the greater. Not only is the New York Central & Hudson River an excellent road, but it has for much of its length tracks for passenger trains exclusively, and thus the obstruction of slow freight trains is avoided; and the Lake Shore & Michigan Southern has an almost unsurpassable double track as far as Cleveland; beyond that, though there are alternative tracks in both directions, for some two hundred miles there is a local traffic in both directions on them, and moreover there are more iron rails than farther east, where but a short section remains to be renewed with steel.

As we showed last week, the average speed on the New York Central & Hudson River road by this train is about 41 miles an hour; from Buffalo to Cleveland on the Lake Shore road it is 37½ miles; on the same road from Cleveland to Chicago, 30 miles. But the latter distance is not travelled at a uniform speed: from Cleveland to Toledo it is about 33 miles an hour; from Toledo to Elkhart, 31 miles; and from Elkhart to Chicago, 26 miles. Thus, on the last division the average speed is but two-thirds of that on the 622 miles from New York to Cleveland.

On the New York Central & Hudson River 35 minutes are given for stops, leaving 10½ hours for the running time—an average of 42.6 miles per hour. On the Lake Shore there are 34 minutes given for stops in the time table, and five other stops specified without time, being crossing stops. Altogether the stops consume about an hour and a quarter, leaving 26 hours as the time the train runs between New York and Chicago—an average speed on the road of 37½ miles per hour.

In considering the time made by this train and the credit reflected by it on American railroad management, we should bear in mind what American railroads are, and what has been chiefly aimed at in working them. They are, as a whole, as is well known, the cheapest railroads in the world, though constructed with the dearest labor and materials. They have had to avoid many constructions considered indispensable in Europe whose chief use is to keep the road clear, and thus prevent obstacles to the rapid movement of trains. The crossings, railroad as well as highway, and in towns as well as in the country, are chiefly at grade. Curves are numerous and

shorter than elsewhere, and there are very few lines where great speed is not more dangerous than on the average European line. But further and chiefly, for twenty years great speed has not been a leading object in working the roads. Before the panic of 1857 American railroad men seemed inclined to follow pretty closely the example of England in speed of trains. Twenty years ago on this very line from New York to Albany over which the new fast mail runs in three hours and three-quarters, a regular passenger train made the same distance in three hours and a half. It soon became evident, however, that fast time, especially on our imperfect roads, was very costly, and that our railroads must carry at low rates. After the panic of 1857, therefore, little more was heard of competition in speed. The ruling type of locomotive, which before had been designed especially for speed, was greatly changed; and, what is especially noteworthy, the attainment of the greatest possible speed has not been the object in designing our modern passenger engines. The speed in view was that which our trains were accustomed to make, and which neither companies nor travellers seemed anxious to increase. In England, on the other hand, and throughout Europe, speed has been a prime requisite, and a special class of express engines has been developed to answer this demand, which, whether better or worse than our passenger engines, are certainly very unlike them, the prevailing, or at least a common, form in England having eight-foot drivers.

What, therefore, we may properly claim and feel some pride in, is, that on a long route, with many grade crossings and on roads much cheaper than European lines, and with locomotives designed and constructed and heretofore used for a speed one-fourth less, we are able to run trains at good English express speed. We are doing their good work—not their best work—with roads and equipments only designed for much lighter tasks, and doing it, apparently, without difficulty.

The Utilization of Old Iron Rails.

One of the questions which, until recently, was frequently asked, in connection with the proposed use of steel rails, has given way to quite another, which may yet prove a more troublesome one to answer. One was, what can be done, or will be done, with the worn-out steel rails when they begin to accumulate? and the other now is, what can be done with the old iron rails that have accumulated in burdensome amounts?

There were those who laughed at the suggestion of making the worn-out steel into new rails, not knowing the great power of the regenerative melting furnace; and so there are now those who will wonder and query still more about the possibility of using the old iron for making new steel, both for rails and, perhaps, for better things, too.

It is clear that, with new steel going down on our roads at the present rate, there is old iron coming up at an equal or greater rate, and further, that most railroads cannot afford long to hold the iron in their own hands. It is clear, too, that, while a small part of this old iron may be good enough to put into common merchant bar, yet for the greater part of it some new use must be found, because of its quality if for no other reason.

To say that a new use must be found, is but another way of saying that some new method of re-manufacture must be introduced into our mills, on quite a large scale, and also of such a nature that the product may be offered in exchange for the old material itself.

Whenever the re-rolling of the old iron as iron has fully ceased—and it is most earnestly to be hoped that it soon may cease—then, and perhaps sooner, we shall look anxiously to see just how trustworthy the newer French methods of making phosphorus-hardened rails may be, as compared with the older method of hardening with carbon. If these methods—a very important if—are really right, then our old iron rails in great quantities will go forthwith to the melting furnace—we had almost said in spite of their quality—and the embarrassment of many of our poorer roads which have no end of old rails, and a crying need of steel, but no money to buy it with, will be greatly if not wholly relieved.

It is safe to believe that some one of the ten or twelve open-hearth furnaces now running will find it practicable and worth while to put the matter to the test upon our own soil at a day not far distant.

Record of New Railroad Construction.

This number of the Railroad Gazette has information of the laying of track on new railroads as follows:

Portland & Ogdensburg.—On the Vermont Division track has been laid from West Concord, Vt., eastward 12 miles to the Connecticut River.

Buffalo & Jamestown.—Extended from Kennedy, N. Y., west by south 6 miles.

Central of New Jersey.—The Long Branch Division has been completed by an extension from Ocean Beach, N. J., southward 4 miles to Sea Girt.

Albia, Knoxville & Des Moines.—The first track has been laid, from Albia, Iowa, northwestward 14 miles to Cedar Creek.

Wasatch & Jordan Valley.—Extended from Fairfield Flat, Utah, to Alta, 8 miles. It is of 3-foot gauge.

This is a total of 44 miles of new railroad, making 746 miles completed in the United States in 1875, against 1,025 miles reported for the same period in 1874, 2,507 in 1873, and 4,623 in 1872.

A MODEL OF A LOCOMOTIVE was recently shown to us, constructed by Mr. Joseph Butcher, of No. 43 Centre street, New York. It is a complete working model, 23 inches long, with cylinders $\frac{1}{2}$ inches in diameter, of both locomotive and tender. It is complete in every particular, even to such small details as the cylinder and pet cocks. Even the steam gauge is a working model, and indicates the pressure in the boiler, which is intended to bear 75 lbs. per square inch. The gauge is less than $\frac{1}{4}$ in. in diameter, so that some idea may be formed of the delicacy of its working parts. The pumps, too, are complete in every respect, and feed about three drops at one stroke. The whole machine is very well proportioned, and is neatly ornamented by the builder, who is an ornamental painter by trade, and never worked in a machine shop. It is a very creditable piece of work, and it must have required an immense amount of patience and skill to complete it.

The Great Sault Ste. Marie Lock.

The Cleveland Leader of Aug. 26 gives the following account of this important work, which will be of great service to the Lake Superior trade:

Work on this grand enterprise was commenced in the spring of 1873. The floor is now being laid, the excavation having been completed. The lock is 515 feet long by 80 feet in width in the chamber, and 60 feet at the gates, with 16 feet of water on the miter sills. Water is supplied by means of two box culverts, extending the entire length of the lock, each eight feet wide by eight deep, with frequent openings two feet by six for the admission of water into the body of the lock. By this means the lock can be very quickly filled, and without "sucking." The floor is of the most substantial kind; stringers or sills, consisting of timbers 12 inches square, are first laid lengthwise of the lock at intervals of 10 feet, and are securely bolted to the solid rock underlying the whole structure. The space between these sills is filled with concrete, composed of water lime, crushed sandstone and fine sand. Over this and at right angles with the sills are other timbers 12 inches square, placed within six inches of each other, and securely bolted to the solid rock by bolts from five to eight feet long. The space between these timbers is filled with cement. Over the whole of this "foundation floor" are spiked two courses of three-inch plank rendered as nearly water-tight as possible.

The mason work is not yet commenced, although the stone is being quarried and dressed and will be partly delivered this fall. The stone for the facing is obtained at Sagetown, Illinois, and is shipped by water from Chicago. Stone for the "backing" will be obtained at some point on the St. Mary's River, probably at Lime Island. In the work of excavation some 30,000 cubic yards of stone and 90,000 of earth were removed.

The cost of the lock will be in the vicinity of \$600,000. This does not include the excavations and stone work above or below the lock. With the exception of some five hundred feet of dredging the last named work is not yet under contract. The entrance to the canals, the new and the old, will be, when completed, about 250 feet in width. Vessels will be able to pass through the new lock in less than half the time it takes to pass through the present double lock.

Boyle & Bosch, of Cincinnati, are the contractors having the work in hand. General Weitzel, United States Engineer, assisted by Messrs. Noble and Davock, are the engineers under whose supervision the work is being carried on. It will require some three years yet to complete the work; but when done it will be of the utmost importance to the commerce of the lakes.

General Railroad News.

THE SCRAP HEAP.

Saddle Tanks on Switching Engines.

The Indianapolis Journal says: "The Indianapolis, Cincinnati & Lafayette Company find that the switching engines built at the Grant Locomotive Works with the tank to carry the water over the boiler are top-heavy and liable to tip over whenever the engine runs round a curve with any speed, or, as in the case of No. 54 just north of the city, a few days since, where the side-track was a little uneven. Therefore, the master mechanic is removing the tanks and adopting the old-style tender."

The same objection to engines with a saddle tank has frequently been made, especially where the engines are heavy and the tanks large.

OLD AND NEW ROADS.

St. Louis & Southeastern.

A telegram dated Sept. 22, says that at a meeting between the managers of this road and the Louisville & Nashville at Nashville, Tenn., the preceding day, an amicable adjustment of the difficulties between the two companies was agreed upon. The war between them has ceased and rates from Nashville to Louisville and St. Louis will be at once raised to the former standard. The basis of agreement is not stated.

Proposals for Improvement of Cherry Creek, Denver.

The city of Denver, Col., is calling for proposals for building a dam and new channel for Cherry Creek, in that city. The dam is to be of timber, about 200 feet long and 30 wide, bolted and cemented to the bed rock, and filled with earth from the new channel, tamped solid. The new channel begins with a 20 feet cut, increases quite uniformly, for 1,200 feet, to 45 feet, then diminishes to 5 feet, which it averages to the Platte River; with from 25 to 100 feet, according to proposition. Proposals for sluicing will also be received, the total fall being 60 feet. The material, loam, sand and gravel, to be wasted on right of way (200 feet wide) as directed, 20 feet of berm to be left between all waste and the new channel. Labor is plenty at \$1.75 to \$2, teams \$3.50 to \$4 per day; lumber \$18 to \$20 per M. Bids must state price per cubic yard hauled, price per cubic yard wasted, and per 1,000 feet lumber measured in the dam. Payments will be made on monthly estimates, one-half cash, one-half in city lots at appraised value. Proposals will be received until Oct. 6; possibly the time may be extended. Information can be obtained from and proposals must be sent to Harvey C. Lowrie, City Engineer, Denver Colorado.

Pittsburgh, Washington & Baltimore.

The resignation of Mr. Cohen and the election of Mr. John King, Jr., to the presidency of this company are, it is said, preparatory steps to the bringing this road directly under the management of the Baltimore & Ohio, and also to a considerable expenditure for improvements on the road. It has long been controlled by the Baltimore & Ohio, but its organization and management have been separate.

Rome, Watertown & Ogdensburg.

This company has for several years been protesting against the high valuation put upon its property and the consequent high rate of taxation. Last year the valuations were reduced in several towns by the assessors. This year the company has brought suits to compel a reduction in the towns of Sandy Creek, Richland, Albion and Annville. A writ of certiorari for the review of the assessments has been granted by the Supreme Court and made returnable at Utica, Oct. 26.

Buffalo & Jamestown.

The track of this road has been extended from the late terminus at Kennedy, N. Y., 60 miles south of Buffalo, west by south six miles toward Jamestown. From Kennedy the

line is parallel to the Atlantic & Great Western. About two miles remain to be completed. An agreement has been arrived at as to the crossing of the Dunkirk, Warren & Allegheny Valley road, the Buffalo & Jamestown paying \$1,600 for the crossing.

Chicago & Iowa.

The Aurora (Ill.) Beacon says that business on this road is so heavy at present that the company has leased 100 freight cars from the United States Rolling Stock Company.

Wilmington & Reading.

In the suit in the United States Circuit Court brought to foreclose the second mortgage, a somewhat singular fact has been brought to light. The company was formed by the consolidation, in 1866, of the Delaware & Pennsylvania State Line Company, of Delaware, and the Berks & Chester Company, of Pennsylvania, the mortgages being executed and the road built subsequently to the consolidation. The charter of the Pennsylvania company gave the usual powers to mortgage the road, equipment and franchises; but it now appears that the Delaware charter limited the power of the company to mortgage or pledge its property expressly to the real estate it might acquire. Consequently it is held that the mortgages on the road do not cover the franchise, rails, equipment, etc., of the 12 miles of road in Delaware, and that a foreclosure sale would give title only to the real estate, the ground over which the road runs, with the station buildings and similar property.

A question as to the jurisdiction of the United States Court in the case is to be raised and will further complicate the case. It was intended at first to bring the suit in the State courts, but since the decision of the Supreme Court in the Oil Creek & Allegheny River case, it is held that, under the new constitution, there is no court in Pennsylvania which has jurisdiction to foreclose a railroad mortgage.

Erie.

A London dispatch, dated Sept. 20, says that Sir Edward W. Watkins, chairman of the bondholders' committee, who was recently in this country, has published his report, in which he describes the permanent way of the Erie Railway as quite equal to the standard in the United States, but the rolling stock, he says, is defective. The net revenue of the line is only 21 per cent. of the gross receipts, and the outstanding debts of the company are equal to about fourteen months' profits. Sir Edward would not raise new capital in the present state of the company's credit, but advises the bondholders to devote the earnings of the line toward paying off the debts, and to issue certificates for the mortgage interest. President Jewett is highly spoken of, and the bondholders are advised to support him to the utmost. A memorandum has been signed securing to English interests a substantial influence in the management of the company, promising to place the whole business on an intelligible footing.

Sir Edward Watkins, in the course of his report, says Mr. Jewett speaks confidently of the probable future progress of the net earnings, but he (Sir Edward) postpones an expression of his own opinion until he has had an opportunity to inspect the next annual account and balance sheet. Pending or proposed litigations with various parties involve complicated transactions and large amounts. The probable results of these proceedings cannot be included in the ledger entries necessary for constructing a balance sheet. He continues:

"In the present state of the credit of Erie, the undertaking seems to me as impossible as it would be unwise, even if possible, to endeavor to raise and remit more capital from England. I can recommend no policy but that of self-redemption. The railway must pay its debts by using that part of its current net earnings which the courts may permit to be so appropriated. A receivership is the alternative of the time. Foreclosure has been threatened. If the latter is to be avoided there must be co-operation and control in the working of the former. I advise you to accept the receivership as the best alternative, under all the circumstances, now possible. And I further advise you to rely upon the honor, as I feel you may also rely upon the anxious labors and full experience, of the President and Receiver of the company."

In response to a call issued by J. Worden Gedney, a number of bondholders assembled at that gentleman's office in New York, Sept. 20. The meeting was private, but it is reported that resolutions were passed in favor of a foreclosure of the sterling and fifth mortgages and authorizing Mr. Gedney, as attorney, to employ counsel. Ex-Auditor Duman was present and made an address, and a statement purporting to be a copy of Mr. Jewett's report was presented. A committee was appointed, consisting of N. B. Lord, B. H. Cheever, S. P. Dinmore, P. N. Mather and C. A. Keep. The whole affair is considered to be of very little importance.

New York & Oswego Midland.

In the United States Circuit Court in New York, September 16, counsel for the receivers moved for an adjournment of the final hearing until Oct. 2, and also to extend the time for taking proofs before the examiners. He further moved that the receivers be authorized to surrender the leased branches of the road to the various lessors, on the ground that they cannot be worked without loss to the trust property.

This last motion was opposed by counsel representing what is generally known as the Utica Committee, who represented that the surrender of the leased branches would be an injury to the bondholders. Counsel for the Utica, Clinton & Binghamton and the Rome & Clinton companies favored the motion, claiming that as worked at present those roads were a dead loss to the owners, and they should either be surrendered or properly worked. The motion was also supported by counsel for the Cowdrey Committee.

The Court adjourned the further hearing of the motion to Sept. 20, to give time to all parties to submit testimony.

Dividends.

Dividends have been declared by the following companies: Central Pacific, 4 per cent., gold, semi-annual, payable Oct. 1. Woodruff Sleeping Car Company, 2½ per cent., quarterly, payable Oct. 1. Camden & Atlantic, 3½ per cent., semi-annual, on both preferred and common stock, payable Oct. 1. Pacific of Missouri (Atlantic & Pacific Company lessee), 1½ per cent., quarterly, payable Oct. 20.

A Meeting of the Railroad Managers.

A meeting of railroad managers was held at the St. Nicholas Hotel, New York, Sept. 17. Among those present were Col. J. A. Scott and A. J. Cassatt, of the Pennsylvania Railroad; Wm. H. Vanderbilt, J. H. Butler and R. L. Crawford, of the New York Central & Hudson River Railroad; E. B. Wadsworth and Mr. R. C. Vilas, representing the Erie Railway; Mr. J. F. Joy, Mr. W. B. Strong, and Mr. C. C. Wheeler, of the Michigan Central Railroad; Mr. J. N. McCullough, General Manager of the Pittsburgh, Fort Wayne & Chicago Railway; Mr. John Cramp-ton, General Freight Agent of the Great Western Railway, of Canada, and Mr. John N. Newell and Mr. C. M. Gray, of the Lake Shore Railroad. The meeting was held for the purpose of having a general discussion concerning the freight interests of the roads represented. Among other matters talked over was the question of equalizing the distribution of live stock business among the various lines running between Chicago and New York. It was finally decided that no change should be made, and that the business should be done in accordance with the existing agreement, which was made in June last. The roads interested in this agreement are the

New York Central & Hudson River, the Pennsylvania, Erie, Pittsburgh, Fort Wayne & Chicago, Michigan Central, and Lake Shore roads. The question in regard to the propriety and feasibility of "pooling" or funding the west-bound business over the three trunk lines running out of New York, between New York and Buffalo, Suspension Bridge and Pittsburgh, which has been agitated for some time, is said to have been taken up. Beyond a general conversation in regard to this question, nothing was done, owing to the absence of Mr. Jewett, Receiver of the Erie Railway. In regard to other matters discussed, which were of a general character, the meeting is said to have been perfectly harmonious.

The General Ticket Agents' Convention.

The semi-annual meeting of the General Passenger and Ticket Agents' Association began in Saratoga, N. Y., Sept. 16, there being a large attendance. Mr. D. M. Boyd, Jr., of the Pennsylvania Railroad presided. After the usual preliminary proceedings, Mr. A. V. H. Carpenter, of the Chicago, Milwaukee & St. Paul, read a paper on the "Ethics of Railroad Management." Mr. S. F. Pierson, of the Cleveland, Columbus, Cincinnati & Indianapolis, was chosen to read an essay at the next meeting.

Action in regard to the matter of receiving tickets from outside parties and companies not members of the Association, was indefinitely postponed.

The question of reduced rates for the Centennial period of six months next year was referred to a committee of thirteen. It was resolved to hold the next semi-annual meeting (on the second Friday in March, 1876) at Jacksonville, Fla. As usual, much of the time of the Convention was occupied with the semi-annual adjustment of rates, etc.

A Pacific Railroad Convention.

A meeting, largely attended, was held in St. Louis, Sept. 15 to advocate the immediate completion of a second railroad line to the Pacific. Many addresses were made and resolutions were passed calling a national railroad convention, to be held in St. Louis, Nov. 23. An executive committee of fifteen was appointed, which will issue an address and make the necessary preparations for the convention.

Rockford, Rock Island & St. Louis.

A cable dispatch says that at the meeting of the bondholders in Frankfort, Sept. 10, Mr. Osterberg submitted a report and statement of his action in buying the road at the foreclosure sale. The bondholders approved of what had been done and resolved to furnish the money necessary to complete the purchase and to improve and operate the road. They also authorized Mr. Osterberg to lease or sell the road, or to form a new company to work it. Mr. Osterberg is now on his return to this country to take the necessary action.

It is thought that the efforts now being made in Rock Island and Davenport to organize a company to lease and operate the road will be successful, as subscriptions to the amount of about \$500,000 have been promised.

Franklin Telegraph.

The adjourned annual meeting was held in Boston, Sept. 15, when the President said that by reason of sickness he was not able to present such a report as he desired, but his assistant, Mr. Chandler, had prepared a memorandum, which he would read.

The memorandum stated that the receipts for the year ending April 30, 1875, were \$290,156; that additions made to the company lines aggregated \$20,652; purchase on the Fall River line, \$4,500; construction of the Springfield & Athol line, \$1,981; construction of the Rye Beach line, to connect with the cable, \$18,996; sundry loans, chiefly in New York City, \$1,173; making a total expenditure of \$26,652. Since April the Atlantic & Pacific Company had advanced an additional sum of \$24,733.08 for improvements and new lines. In concluding, the memorandum stated that the prospects for the company were more favorable than at any time heretofore, notwithstanding the loss of Government business and an indebtedness to the Atlantic & Pacific, which has now to be provided for.

After appointing a committee to audit the accounts and to examine into the present relations with Atlantic & Pacific Telegraph Company and report on the same, the meeting adjourned.

Through from New Orleans to New York.

For the convenience of the Southern members of the General Passenger Agents' Association who desired to attend the meeting at Saratoga, a special Pullman Car was run through from New Orleans to New York by way of the "Kennesaw Route." The General Passenger Agent, Mr. B. W. Wrenn, extended an invitation to a number of gentlemen who came through with him on the car, which is said to be the first ever run through from New Orleans to New York, although they are run regularly from New Orleans to Baltimore. The time-table for the special car was as follows:

Leave New Orleans...	Time.	Miles.
" Mobile.....	4:40 p. m., September 12.....	141
" Montgomery.....	10:35 p. m., " 12.....	141
" Opelika.....	7:31 a. m., " 13.....	320
" Atlanta.....	10:46 a. m., " 13.....	386
" Dalton.....	4:10 p. m., " 13.....	495
" Dalton.....	7:55 p. m., " 13.....	595
Arrive Lynchburg.....	8:35 p. m., " 14.....	1,038
" Baltimore.....	8:35 a. m., " 15.....	1,255
" Philadelphia.....	1:30 p. m., " 15.....	1,353
" New York.....	5:10 p. m., " 15.....	1,448

Albia, Knoxville & Des Moines.

The track is now laid from Albia, Ia., northwest to the crossing of Cedar Creek, a distance of about 14 miles. The bridging was all done and the track was expected to reach Knoxville, 12 miles further, early in October.

Chicago, Rockford & Northern.

Work still continues on this new road from Rochelle, Ill., to Rockford. It is being finished up and ballasted and some of the grades reduced. No time has yet been fixed for the running of regular trains, though several excursion trains have passed over the road.

Providence, Ponagansett & Springfield.

A meeting of the corporation was held in Willimantic, Conn., Sept. 14, when committees were appointed to raise money to pay for the final survey and location of the road through Connecticut.

Connecticut Western.

The freight business of this road is said to be increasing very fast, and the present equipment is not sufficient to do the work. New sidings are also required to facilitate the movement of freight trains.

Meetings.

The following companies will hold their annual meetings at the times and places given:

Buffalo, New York & Philadelphia, at the office in Buffalo, N. Y., Oct. 6, at 10 a. m.

Western Union Telegraph, at the general office in New York, Oct. 13.

New Haven & Northampton.

The question of the binding force upon the company of the law of last winter requiring the establishment of a depot at Plantville, Conn., which the stockholders voted not to accept, will shortly be tested. The people of Plantville have bought the necessary land and are proceeding to build the depot building as the law required them to do. As soon as the building is ready, if trains do not stop, suit will be brought.

ing as the law required them to do. As soon as the building is ready, if trains do not stop, suit will be brought.

Chesapeake & Ohio.

Hasler's Circular of Sept. 17 says: "A short time since it was rumored that the coupons due on the 1st of November next on the main bonds would be paid, but it is now authoritatively stated that they will not be met."

Danville, Olney & Ohio River.

The directors of this projected road have made an agreement with the Danville & Charleston Company to build and use in common the track from the intersection of the two lines at Newman, Ill., to Danville.

Raleigh & Augusta Air Line.

This company recently tendered a further instalment of \$230,000 State bonds to the Treasurer of North Carolina in exchange for an equal amount of the company's bonds held by the State.

St. Louis, Iron Mountain & Southern.

A car-hoisting apparatus, for the changing of car-bodies from trucks of 4 ft. 8 in. to those of 5 ft. gauge, is to be put up at the crossing of the Little Rock & Fort Smith road near Little Rock, Ark.

The shops of the Arkansas Division at Argenta, opposite Little Rock, are running full time with a full force of men employed.

It is said that all the passenger trains are to be fitted with air brakes shortly.

Tyler Tap.

A general meeting of the stockholders was held in Tyler, Tex., Sept. 8, when it was resolved to complete at once the section from Tyler north to the crossing of the Texas & Pacific road, about 20 miles. Nearly enough subscriptions to the stock have been secured to pay for the grading from Tyler north to Mount Pleasant in Titus County, nearly 65 miles.

Sanpete Valley.

Eight miles of the grading of this road, including all the heavy work, have been completed, and negotiations are now in progress for the iron and equipment. The road is to be of three-foot gauge and will be 22 miles long, from the Utah Southern Extension at Nephi, Utah, to Wales, where there is a large coal bed which has been already partly opened, and where coke ovens have been built and are in operation.

Peoria & Rock Island.

The Auditor, Mr. Whitridge, reports the earnings as follows for August:

Freight.....	\$20,040 07
Passenger.....	9,386 00
Mails, express, etc.....	714 80

Total (\$333 per mile).....	\$30,140 87
Expenses (55.52 per cent.).....	16,735 56

Net earnings (\$147 per mile).....\$13,405 31
The net earnings show an increase of \$3,229.37, or 31.6 per cent., over the corresponding month of last year.

Central Pacific.

The Central Pacific, like the Union Pacific, has raised its annual dividend rate from 6 to 8 per cent., having just declared a semi-annual dividend of 4 per cent. As it is payable in gold, this is equivalent to 4.65 per cent. in currency at present rates, or a little over 9 1/2 per cent. annually.

Philadelphia, Wilmington & Baltimore.

The recently completed second track from Chase's to Perrymanville, 12 miles, was put in use Sept. 20, and trains now use the double track over the whole line. Another new iron span—the fifth—of the Susquehanna bridge at Havre de Grace has been completed, and the sixth is now being erected. No more will be built this year. The new spans are Pratt trusses and are built by the Baltimore Bridge Company.

The Pullman cars running between Philadelphia and Baltimore on the ordinary express trains have been discontinued. It is said that the travel by them was so light that it did not pay, and the express trains have become so long and heavy as to make it difficult to make time. Pullman cars continue in use on the limited express, which is entirely composed of such cars.

St. Louis, Keokuk & Northwestern.

The bridge over the Des Moines River at Keokuk was seriously damaged again by the recent freshets. One span was moved out of place, and part of the trestle work at the north end was swept away. It is only a short time since the bridge was partly destroyed.

The Tanner Brake Patent.

In the suit brought against the Chicago & Northwestern Company for infringement of the Tanner brake patent, the United States Circuit Court has made a final decree reducing the amount of damages from \$63,838.40, the amount allowed by the order of Dec. 25, 1873, to \$47,725. The railroad company has given notice of an appeal to the Supreme Court.

Central, of New Jersey.

The extension of the Long Branch Division is now completed to Sea Girt, N. J., four miles beyond the late terminus at Ocean Beach, and 12 miles south of Long Branch. The Long Branch Division is now 46 1/2 miles long, from the junction with the main line at Elizabethport south to South Amboy, then east by south to Long Branch, then south again to Sea Girt. Nothing now remains to be done except the connection with the Freehold & Jamesburg at Sea Girt. Regular trains were to begin running through to Sea Girt about the end of this week.

Oil Creek & Allegheny River.

In the foreclosure suit brought in the United States Circuit Court in Pittsburgh, after the failure of the suit in the Pennsylvania Supreme Court, the Court has reached a decision and has made a decree under which the agreement made between the bond and stockholders, will be carried out. The road will be sold under foreclosure and a new company organized. The floating debts, including a number of large claims alleged to be fraudulent, will be wiped out by the foreclosure.

Indianapolis, Decatur & Springfield.

This company filed its certificate of incorporation with the Secretary of State of Indiana, Sept. 15. The capital stock is to be \$500,000. The line of the road is from Indianapolis west through the counties of Marion, Hendricks, Putnam, Parke and Vermillion to a junction with the former Indiana & Illinois Central, near the Illinois State line. The name of the new company is almost the same as that of the Illinois corporation formed by the bondholders of the Indiana & Illinois Central, and it is probably the intention to consolidate the two.

Paris & Danville.

The Receiver, Mr. James Eads, reports to the Court that he has taken possession of the road, the coal mines belonging to the company, and also the property of the contractors, H. Sandford & Co. The affairs of the company and the contractors are so mixed up that it is almost impossible to tell what belongs to each. A mortgage for \$2,000,000 was executed Feb. 1, 1873, and under it \$740,000 of bonds were issued, all to the contractors. No interest has ever been paid on these bonds. A new mortgage for \$2,500,000 was made July 1, 1873, and the bonds issued under the former mortgage were to be exchanged for

the new issue, but it has not yet been done. The floating debt of the company and contractors is about \$900,000. The road from Danville to Marshall, 52 miles, is in fair condition; from Marshall to Robinson it is unballasted and very poor. It will require \$50,000 to finish the road to Lawrenceville, the proposed southern terminus. Additional equipment is needed at once to enable the road to carry the traffic which can be secured. The Receiver asks authority to borrow \$100,000, to finish the road and buy new equipment.

Cincinnati & Westwood.

Work has been begun on this narrow-gauge suburban road, and it is to be completed by the close of the year. Bivans & Gallagher, of Brown County, O., have the contract for the grading and ties.

Boston & Albany.

Notice is given that the bonds of the Western Railroad Company, the principal of which is due Oct. 1, will be paid on presentation at the office of the Treasurer of the company in Boston at any time after Sept. 20, without rebate of interest. The bonds in question are the 6 per cent. Western Railroad loan of 1855, and the amount of bonds outstanding is \$665,000.

Eastern.

In view of the great depression in the stock and the many rumors prejudicial to the company which have lately been in circulation, the board of directors has appointed a committee, consisting of Gen. D. W. Lawrence, John Cummings and Henry L. Williams, to prepare a report on the condition of the company, which will soon be completed and will be submitted to the public.

Scioto Valley.

Work is in progress all along the line from Columbus, O., to Circleville, and the grading of several sections is completed. The ties for the section from Columbus to Circleville are contracted for, to be delivered by Dec. 1. The contract for the wooden trestles and the road crossings has been let to L. B. Eddy & Co., of Cleveland, this work to be done also by Dec. 1. A contract for track laying and ballasting, to be done by Dec. 15, has been let to J. D. Criley, of Kansas. The engineers are now at work making the final location from Circleville to Chillicothe.

Nashville, Chattanooga & St. Louis.

At the annual meeting in Nashville, Tenn., Sept. 15, a stockholder offered resolutions declaring that shippers from local points should not be charged higher rates on the same class of freight than those paid on through freight coming from Nashville or beyond to Chattanooga or points south, and directing the officers of the road to revise the tariff on that basis. After some discussion the resolutions were tabled.

Atlanta & Richmond Air Line.

A meeting of the stockholders was held in Atlanta, Ga., Sept. 14, and continued on the following day. A long and very bitter discussion was caused by an effort to rule out the votes of the preferred stock, but no final conclusion was arrived at. This preferred stock amounts to \$1,900,000 and is held by the Pennsylvania and the Richmond & Danville companies. A committee was appointed to consult with the committees representing the first and second mortgage bondholders and the preferred stockholders and to see whether some means cannot be devised to adjust differences and put an end to the litigation now in progress. The committee consists of Judge O. A. Lochrane, Thomas Alexander, and R. Y. McAden, and will meet in New York Nov. 1.

Atlantio, Gulf & West India Transit.

An iron and brass foundry has been added to the repair shops of this company at Fernandina, Fla. The first iron castings were made Sept. 2.

Savannah & Charleston.

In the matter of the Savannah & Charleston Railroad Company, the South Carolina Supreme Court has decided that the writ of error from the Supreme Court of the United States operates as a *superseas*, and they therefore dismiss the appeal of the Controller General from the decision of the Circuit Judge. The Court says that, even if the plaintiff had not forfeited his writ so that it might have effect as a *superseas*, there is nothing to prevent his doing so before the expiration of the time allowed by law, for by the act, execution, where a writ of error may be a *superseas*, shall not issue until the expiration of the full term of 60 days.

Chicago & South Atlantic.

At the annual meeting in Chicago last week almost an entire new board was chosen. It is understood that the new directors will at once take steps to secure new subscriptions to the stock, pay off the floating debt and go on with the work on the road. The floating debt is about \$20,000, and subsidies to the amount of \$350,000 have been voted to the road, to secure which, however, a good deal of work must be done. It is said that the new directors bring with them to the company about \$200,000 in stock subscriptions.

New Jersey & New York.

This company is now trying to sell, through Rollins Brothers & Co., of New York, the remainder of its issue of \$400,000 first-mortgage 7 per cent. bonds. These bonds were offered some time ago, but few of them being sold.

Kansas Pacific.

The Land Department recently sold to an English company 25,780 acres of land in one body at an average price of about \$4 per acre. The land is located in Russell County, Kan., just east of the Victoria Colony and about 270 miles west of Kansas City.

Illinois Central.

The Land Department reports for August sales of \$38.39 acres of land for \$6,621.90. Cash collections on land contracts amounted to \$11,755.79.

The Traffic Department reports earnings for August as follows:

	1875.	1874.	Inc. or Dec.	P. c.
In Illinois, 707 miles.....	\$508,683 98	\$572,108 24	Dec. \$63,444 26	11.1
In Iowa, 402 miles.....	142,638 45	139,860 74	Inc. 2,777 71	2.0
Total, 1,109 miles.....	\$651,322 43	\$711,968 98	Dec. \$60,646 55	9.5

The Illinois earnings are \$719 per mile, the Iowa earnings \$355, the average for the whole road being \$587 per mile.

Washington & Ohio.

The Alexandria (Va.) Gazette says: "It is understood that the negotiations for the transfer of the Washington & Ohio Railroad, proposed at the late meeting of the stockholders of the company, for the purpose of having the road extended to Winchester, and probably beyond, have been suspended, with but little likelihood of being renewed."

Santa Cruz.

This company has succeeded in negotiating a loan sufficient to complete and equip the road. A large force has been set to work with the intention of having the road completed from Santa Cruz, Cal., to Watsonville, before the rainy season sets in.

St. Louis & Southeastern.

The war between this company and the Louisville & Nashville is to be carried into the courts. St. John Boyle, Receiver of the road in Kentucky, has filed a bill in equity in the United States District Court at Louisville, asking for an injunction to re-

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strain the Louisville & Nashville and the Nashville, Chattanooga & St. Louis companies from discriminating in rates or otherwise against the Southeastern. The bill sets forth that the two companies have agreed to carry freight going south of Nashville for each other at low through rates, while they charge local rates on all freight coming to Nashville over the Southeastern, thereby injuring the latter and depriving it of much trade that legitimately belongs to it.

Utah Northern.
The extension northward into Idaho is being pushed forward, twelve miles of grading being already completed, with a large force at work. The tracklayers were to begin putting down the rails this week.

Chicago, Clinton & Western.
A Davenport (Ia.) dispatch says: "Work on this road has been suspended. About 400 men have been at work and they have been discharged. Mr. Bridges, the contractor under Mr. F. E. Hinkley, says that the work will not be resumed until Mr. Hinkley can adjust some difficulties he has had with one of the railroads with which he is connected; but it is very likely that nothing more will be done until next spring." The track is laid for about 17 miles westward from Clinton, Ia.

Wasatch & Jordan Valley.
The extension of this road from the former terminus at Fairfield Flat, Utah, to Alta is completed, and a train passed over it Sept. 12. The distance is eight miles through a very difficult mountain country. The extension will serve several large mines, the ore from which has heretofore been carried to the railroad by teams. In order to prevent trouble from the heavy mountain snows, the whole eight miles of the extension are to be protected by snow-sheds, at a cost of \$60,000.

Cairo & St. Louis.
About 400 feet of the embankment and track of this road was washed away by the Mississippi at a point about a mile above Cairo, Ill., Sept. 17. Travel was completely stopped. More of the embankment was said to be in danger.

Chicago, Milwaukee & St. Paul.
In 1863, the old La Crosse & Milwaukee Company became insolvent, and in the same year Francis Vose brought suit to recover a balance due for 10,000 tons of rails delivered to the company. He afterwards was one of the parties who bought the road and reorganized the company. He now brings suit in the New York Supreme Court to recover the old balance, claiming that the reorganized company assumed the debts of the old corporation. Demurrer was made to the complaint by the company, and the court has sustained the demurrer, holding that in the sale and reorganization no provision was made for paying the unsecured debts of the old company.

Sussex.
The town of Newton, N. J., has resolved to contest vigorously the validity of the \$25,000 bonds issued to the company several years ago. As before mentioned, suit has been brought to compel the payment of interest on these bonds, the present owner of which is the Lackawanna Coal & Iron Company. There promises to be a sharp contest between the company and the town, but the former seems to have adopted rather a petty policy. The railroad accommodations of Newton have been cut down as much as possible, trains taken off, and the apparent intention is to make the town feel its dependence upon the road as much as possible.

Paulinskill Valley.
The company has been making a further reduction in the wages of its employees. Track hands now receive only \$1 per day.

Philadelphia & Reading.
It is proposed to build a railroad from the Delaware River at Columbia, N. J., northeast through the valley of the Paulinskill to Blairstown, a distance of about ten miles. Surveys of the line will be made at once.

Indianapolis & Western.
A statement published in several papers to the effect that the company was negotiating a new loan in England is contradicted by authority of the company.

Somerset.
Work is now progressing rapidly on the extension of this road northward from the present terminus at Madison, Me.

Atlantic, Mississippi & Ohio.
The machine shops of this road at Lynchburg, Va., took fire about 3 o'clock on the morning of September 12. The fire spread so rapidly that the shops were completely destroyed in a short time, with all the tools, machinery and materials. By great exertions on the part of the firemen and employees of the road, the round-house, with the engines in it, was saved.

Elizabeth, Lexington & Big Sandy.
So much of this road as lies in Fayette County, Ky. (about 12 miles), was sold at sheriff's sale, September 14, to satisfy a judgment for damages obtained in a local court. Gen. Leslie Combs, the holder of the judgment, bid in the property for \$5.

Indianapolis, Bloomington & Western.
A call, signed by a number of bondholders, has been issued for a meeting of the first-mortgage bondholders, to be held at the office of the Railroad Bondholders' Association, No. 152 Broadway, September 30, at 12 noon. Parties interested are requested to communicate with William D. Osborne, No. 152 Broadway, New York; L. H. Alden, Passaic, N. J.; Jesse Peck, Schenectady, N. Y.; or W. N. Murphy, Frankfurt-am-Main, Germany. A full statement of the condition of the company is promised at the meeting.

Hannibal & St. Joseph.
Messrs. William H. Swift, Sidney Bartlett and Nathaniel Thayer, trustees, advertise for proposals for the sale to them of \$50,000 of the land bonds of the company, in accordance with the provisions of the mortgage. Proposals may be addressed to William H. Swift, at Ward, Campbell & Co.'s, No. 56 Wall street, New York, or to the trustees at the office of their agent, Charles Merriam, No. 26 Sears Building, Boston. Proposals will be received up to September 27, and will be opened by the trustees at their office in Boston, September 28.

Canada Central.
The line of the extension to Pembroke has been finally settled. It will run from Renfrew by way of Eden and Snake River to Muskrat Lake, then along the lake and Muskrat River to Graham's Bridge, thence southwest to the Ottawa, and along that river to Pembroke.

A Texas Storm.
A very severe storm of rain and wind passed over Eastern Texas last week, doing much damage to the railroads of that section. The worst effects of the storm were felt at Galveston, which is peculiarly exposed by its location to such visitations. Besides the damage to the city by wind and high water, the long pile bridge of the Galveston, Houston & Henderson road across the bay was broken in five or six places, two schooners having been driven through it at one point, making a gap 150 feet long. The track on the low ground west of the bay was badly washed and made impassable for several miles. The

partly completed bridge of the Gulf, Colorado & Santa Fe road was almost entirely destroyed. On the International & Great Northern road a number of bridges were carried away and the road blocked for several days. The Houston & Texas Central suffered considerable loss from the washing of its sidings and river track at Houston, and some damage was also done to the Austin Branch.

Portland & Ogdensburg.
The track of the Vermont Division has been laid from the former eastern terminus at West Concord, Vt., east to the Connecticut River, a distance of about 12 miles, and an excursion train ran from St. Johnsbury to the river September 14. The Vermont Division has now 77 miles of track in operation, from the Connecticut River west by north to Johnson, besides four or five miles of track that was laid from Swanton eastward two years ago.

North Pacific Coast.
The locating party on the extension from Tomales, Cal., northward has reached Freestone. Work is progressing on the tunnel through Tomales Hill and the grading north of the hill will be begun shortly, the intention of the company being to have the road to the Russian River ready for the track by the time the tunnel is finished.

Worcester & Somerset.
A meeting was recently held of the bondholders of this company, but no definite conclusion was reached and they adjourned to meet again shortly. It is proposed that the bondholders take the road and extend it from the present terminus at Newtown, Md., and extend it across the peninsula to Swansgut, on Chincoteague Sound, a distance of about nine miles. At Swansgut a pier would be built out to deep water, and it is thought that this extension would enable the road to secure a large share of the oyster trade, which is a considerable item in the business of the Eastern Shore. The grading on the extension would be very light and it is estimated that it could be built for \$75,000.

Rio Grande.
In Brownsville, Tex., Sept. 7, Charles Andre, a stockholder, brought suit against the company and individual directors, alleging fraud and mismanagement, and praying for injunction to restrain the directors and the owners of first-mortgage bonds on the road franchises, etc., from alienating them; and also to prohibit the company from acting as an agent for contractors for the transportation of Government supplies from Brasos Santiago to Laredo, Ringgold and Fort Brown; also praying for a receiver. The injunctions were granted, and the motion for a receiver was to be heard Sept. 11.

Rochester & State Line.
The board of directors has entered into a contract with Thos. Leighton for the completion of the road from Le Roy to Salamanca, under the provision that a satisfactory arrangement can be made with the creditors, and that the city and towns exchange the bonds of the company now held by them in order to allow of the proposed new issue of bonds. It is also expected that the people of Rochester and along the line will render substantial aid by subscribing to the stock and buying bonds. The road is all, or nearly all, graded from Le Roy to Salamanca.

Gilman, Clinton & Springfield.
Under the recent order of the Court the books and papers are now being examined by two sets of accountants, one representing Mr. Seyton, agent of the trustees, the other Mr. Hinkley, the late Receiver. Two statements will be prepared, one by each party, and a comparison of the two will then be made. All cases of difference between the two will be submitted to the Special Master, Mr. Prince, who will make up his report and submit it to the Court for approval.

Milwaukee, Lake Shore & Western.
In the suit begun by the bondholders, in which the application for a receiver was recently granted by the Court, Mr. F. W. Rhineland, President of the company, has been appointed Receiver. The road, which was completed in 1873, runs from Milwaukee, Wis., northward parallel and near to the west shore of Lake Michigan to Manitowoc and thence westward to Appleton. It is 120 miles long and has besides a branch six miles long from Manitowoc north by east to Two Rivers. The funded debt consists of \$3,000,000 first-mortgage 7 per cent. gold bonds. The interest on the bonds has been in default since December, 1873. No statement of earnings has been published for some time. An arrangement was at one time made to lease the road to the Wisconsin Central, but it was not carried out.

The Connecticut Railroad Commission.
The Commissioners are now making their regular annual inspection of the railroads of the State. This week they have passed over and examined the New London Northern, the Norwich & Worcester, the New York & New England and the Connecticut Valley roads.

Louisville, Cincinnati & Lexington.
Receiver Gill reports for August as follows:

Balance from July	\$127,500 30
Receipts from all sources	116,099 17
Total	\$313,542 47
Disbursements during month	82,196 29
Balance to September	\$231,346 18
For the month of July the actual earnings and expenses of the road were as follows:	
Passengers	\$38,615 90
Freight	37,676 02
Other sources	6,305 03
Total earnings (\$345 per mile)	\$79,797 94
Operating expenses (66.25 per cent.)	66,824 20
Net earnings (\$49 per mile)	\$10,973 44
Rent paid Pitts., Cin. & St. Louis Co.	\$1,811 12
" " Elizabeth, Lex. & Big Sandy	1,452 02
Deficit operating Louisville Transfer	1,937 02
" " Newport & Cin. Bridge	507 06
State tax	1,421 25
Expense account	26 85
	7,186 12
Net balance	\$3,787 22

Which is only \$16 per mile of road operated.

New Orleans Pacific.
At a meeting held in Baton Rouge, La., recently, it was resolved to offer to grade and tie the road from Baton Rouge to the Amite River, about 12 miles, on condition that the company adopts the route by way of Baton Rouge.

The contractor has begun work on the grading near Alexandria, La., with a force of 300 men, which is to be increased as fast as circumstances will permit.

New Orleans, Mobile & Texas.
A careful examination has recently been made of the numerous pile bridges and trestles on the line between New Orleans and Mobile, and they have all been pronounced safe. In order, however, to make the road as safe as possible and to save the cost of repairs rendered necessary by the rapid decay incident to the climate, it has been resolved to fill up the smaller trestles wherever practicable, and the work has already been begun. Iron bridges have also been ordered to replace the pres-

ent wooden ones at Pearl River, Chef Menteur, the Rigolets, Bay St. Louis and Ocean Springs.

Pennsylvania Railroads in 1874.

The annual report of the Auditor General of Pennsylvania for 1874 gives the following statements of general results of operation and of the condition of the railroads of the State for the year. As the table, however, includes a number of roads, such as the Erie, the Lake Shore & Michigan Southern, the Pittsburgh, Fort Wayne & Chicago and others which have only a small part of their mileage in the State, the figures are considerably larger than they would be if the report had covered only the mileage actually within the State. The general results are as follows:

Capital stock paid in	\$42,931,993 50
Funded debt	437,167,113 54
Floating debt	34,923,155 75
Total stock and debt	\$95,022,262 79
Cost of road and equipment	744,701,926 00
Length of main line laid, miles	7,886 00
Length of main line in Pennsylvania	8,820 87
Length of branches owned	1,647 64
Miles of second track laid	1,808 59
Miles of sidings	2,733 14
Number of locomotives	4,100
" " passenger cars	1,800
" " baggage, mail and express cars	278
" " freight cars	83,100
" " coal, ore, stone and tank cars	70,830
Passenger train mileage	31,907,500
Freight " "	65,035,173
Coal " "	9,200,161
Number of through passengers carried	4,327,796
Total number of passengers carried	42,297,156
Tons through freight	21,261,382
Tons of freight, all classes	78,992,708
Earnings from passengers	\$27,763,021 72
" " freight	101,486,833 05
" " mails and express	8,742,884 47
" " other sources	4,454,015 03
Total earnings	\$137,444,545 16
Expenses	82,940,105 49
Net earnings	\$54,504,439 67

The number of persons killed and injured by accidents is reported as follows: Killed, passengers, 16; employees, 170; others, 345; total, 540. Injured, passengers, 93; employees, 726; others, 323; total, 1,142.

The freight carried during the year is classified as follows, the quantity being specified in tons: Anthracite coal, 29,901,029; bituminous coal, 10,444,657; petroleum and other oils, 3,882,641; pig iron, 1,653,226; railroad iron, 854,633; other iron or castings, 1,104,588; iron and other ores, 4,160,295; anthracite and bituminous coal, 4,036,080; lime, limestone, sandstone and slate, 2,381,111; agricultural products, 6,027,360; merchandise and manufactures, 4,434,775; live stock, 1,827,967; lumber, 5,946,142; other articles, 5,147,833.

The following table gives the earnings, expenses and net earnings of all the roads included in the report, whose annual reports or statements of earnings have not heretofore been published:

	Earnings.	Expenses.	Net.	Earn. per mile.	P. c. of expe's.
Bachman Valley	\$11,431	\$7,450	\$3,980	\$1,270	65.35
Barclay	40,060	32,478	7,582	1,878	102.30
Bellefonte & Snow Shoe	274,996	58,358	216,638	2,988	178.91
Bell's Gap	43,416	26,091	17,325	5,108	64.73
Catsaunqua & Fogelsville	90,839	49,969	40,870	3,851	55.29
Cornwall	56,815	26,133	30,682	6,162	46.01
Corning, Cowanesque & Antrim	412,581	285,743	126,838	6,447	60.25
Del. L'ackawanna & Western	5,347,726	2,136,812	3,210,914	27,434	30.77
Dunkirk, Allegheny Valley & Pittsburgh	368,487	268,071	100,416	3,966	60.25
East Broad Top	34,963	25,670	9,293	1,878	102.30
Hanover Branch	91,187	55,865	35,322	2,988	178.91
Ironton	33,206	14,559	18,647	3,019	43.85
Little Saw Mill Run	100,654	45,556	55,098	3,551	46.33
Littlestown	16,763	14,840	1,923	1,766	86.39
Lawrenceville & Evergreen	2,383	3,170	787	915	90.43
Muncy Creek	10,291	7,983	2,308	1,868	77.00
Montrose	24,898	14,314	10,584	920	67.71
Parker & Karna City	139,183	49,968	89,215	13,203	38.47
Pittsburgh & Castle Shannon	5,515	10,136	4,623	831	174.31
Shannon	462,414	88,987	373,427	.....	.....
Susquehanna, Gettysburg & Potomac	33,920	22,997	10,923	1,900	68.74
Tioga	286,464	201,450	85,014	12,096	51.85

* Deficiency.

The mileage owned, stock and debt of these lines were as follows:

	Mileage.	Stock.	Funded Debt.	Floating Debt.
Bachman Valley	9.00	\$65,743	\$45,000	.....
Barclay	18.25	1,200,000	15,000	.....
Bellefonte & Snow Shoe	21.20	800,000	90,000	.....
Bell's Gap	8.40	200,000	200,000	\$15,000
Catsaunqua & Fogelsville	25.50	425,000	.....	.....
Cornwall	9.23	300,000	.....	.....
Corning, Cowanesque & Antrim	64.00	1,600,000	.....	.....
Del. L'ackawanna & Western	195.00	28,500,000	6,997,300	726,236
Dunkirk, Allegheny Valley & Pittsburgh	90.60	1,200,000	3,200,000	236,645
East Broad Top	30.00	400,000	900,000	197,437
Hanover Branch	12.50	116,850	.....	.....
Ironton	11.00	300,000	300,000	.....
Little Saw Mill Run	9.50	100,000	70,000	4,702
Littlestown	8.00	34,860	40,000	.....
Lawrenceville & Evergreen	2.61	10,000	12,800	.....
Muncy Creek	6.50	124,190	129,800	88,000
Montrose	27.00	391,684	44,900	9,872
Parker & Karna City	10.20	75,000	62,000	82,000
Pittsburgh & Castle Shannon	7.00	280,000	160,000	51,728
Shannon	6.00	542,380	281,164	164,882
Susquehanna, Gettysburg & Potomac	17.00	1,500,000	.....	.....
Tioga	30.80	880,900	320,500	.....

It will be seen that, with two or three exceptions, these are short local roads, mainly built to serve coal or iron interests. In some cases, as of the Delaware, Lackawanna & Western, the capital accounts represent much more than the road actually owned, large amounts being invested in coal property and mines, branches and leased roads. Of the roads given in the table the Parker & Karna City was not fully opened until April, so that its earnings are only for nine months. The East Broad Top only worked ten miles for ten months of the year, the remaining 20 miles having been opened to travel just at the close of October. The Bellefonte & Snow Shoe and the Pittsburgh & Castle Shannon include sales of coal in the receipts.

Los Angeles & Independence.

A depot costing \$10,000 is to be built in Los Angeles. Work is in progress at the Cajon Pass, and the tunnel there has one heading in 325 feet.

European & North American.

It is said that this company has made a proposition to the English bondholders, the substance of which is that if the bondholders will fund one-half the amount of their coupons for six years in a new 6 per cent. bond having 10 years to run,

the company will pay the other half of each coupon in cash as it matures. In case the proposal is accepted the half of the July coupon, the first one passed, will be paid soon.

One thing is evident and that is that provision must be made for changing the gauge very soon, or the road will suffer serious loss of traffic. Now that the Intercolonial gauge has been changed, all of its connecting lines are of standard (4 ft. 8½ in.) gauge, while the European & North American still retains the 5 ft. 6 in. track.

The Hoosac Tunnel Line.

The Manager reports that the receipts of the tunnel and State road for July were: freight, \$2,766; passengers, \$2,008; total, \$4,774. The expenses were \$3,370, of which \$2,744 were for salaries and wages; net earnings, \$1,404. The traffic through the tunnel is, of course, light, and must continue to be so until the arching of the tunnel and the rebuilding of the approaches are finished.

Spartanburg & Asheville.

The President of this company states that, according to the latest surveys and estimates, about \$710,000 will be required to complete the grading of this road from Spartanburg, S. C., to Swannano Junction, N. C., in addition to the work already done. By the improved location of the mountain section only one tunnel, 165 feet long, will be required. The company has county subscriptions of \$150,000 from Union, of \$100,000 from Spartanburg County, S. C., and of \$100,000 each from Henderson and Buncombe counties in North Carolina, besides private subscriptions of \$100,000. Deducting amounts now due on contracts, there is about \$500,000 available for the work. The Henderson and Buncombe subscriptions, however, are only available for the work in those counties.

American Railroad Bonds in Switzerland.

A consul writes from Switzerland: "American Government securities are largely held in Switzerland, and American railway bonds are almost disappearing from the market. All confidence in the latter securities is lost; nor is it much to surprise one, when it is remembered that foreign capital to the amount of hundreds of millions of dollars is lying in American railway bonds, and not drawing one cent of interest. Investors here have not lost faith so much in the resources of America as they have in the common honesty and uprightness of the managers of American roads; and I doubt very much if sufficient money could be borrowed in Switzerland to-day to build a single mile of American railway. There is an abundance of money here to lend, but those holding it are discouraged from investing in our railway securities."

Railroads in Brazil.

An English paper says: "At the close of 1874, Brazil had brought 836½ miles of line into operation, and the construction of 1,094½ miles more was on hand. These new lines have now reached such an advanced stage that it is hoped and expected that they will shortly be ready for traffic. Further, 2,392½ miles more have been conceded, so that Brazil has either completed, undertaken, or mapped out 4,263½ miles of line. The Brazilian Government has decided in principle that new lines called for in the interest of the national defence shall in future be constructed at the national cost. Other lines will be constructed, if they are constructed at all, by private individuals, to whom Brazil will guarantee a minimum interest of 7 per cent. per annum. In order to carry out these principles, the Brazilian Government has solicited from the Brazilian Legislature authority to conclude a loan of \$5,000,000, with a view to the construction of a strategic railway directing itself to the province of Rio Grande do Sul. Several concessions have been granted besides of other lines, which are to receive the proposed minimum guarantee of interest."

Western North Carolina.

The report of the East Tennessee, Virginia & Georgia Company thus sums up the condition of the affairs of this road: "Referring to the remarks contained in the last annual report of your board of directors, in regard to the legal impediments and obstructions, existing to prevent the North Carolina Railroad Company from building the Western North Carolina Railroad to a junction with your Morristown Branch at Paint Rock, which the former company was under contract obligations with your company to do; we have to state that the difficulties then existing have been continued and augmented by additional litigation at the hands of the stockholders and construction bondholders of that company to such an extent as to make it highly probable that it would never be permitted to be carried out its contract."

"Seeing this, the State of North Carolina, which was to have been a beneficiary in the purchase of the Western North Carolina Railroad as owner of three-fourths of the capital stock in the North Carolina Railroad Company, acting through its Legislature, passed a bill having for its object the purchase of the Western North Carolina Railroad, on account and in behalf of the State, at a maximum price of \$850,000. The act provides that in case the creditors of the Western North Carolina Railroad declined to accept the amount, then it was the duty of the State authorities to appeal from the decree of foreclosure which had been rendered by the Circuit Court of the United States in North Carolina, to the Supreme Court of the United States."

"After carefully considering the delay that would have resulted from such a course of action, your board and the other creditors decided to accept the terms offered by the State, and the contract with the North Carolina Railroad Company was canceled, and a sale of all the interests made to the State of North Carolina."

"The act referred to created a commission, consisting of the Governor and Messrs. Armfield and Robertson, the two latter being the respective Speakers of the Senate and the House of Representatives of that State."

"It authorizes the creation of \$850,000 of 7 per cent. bonds running fifteen years, to be issued by said commissioners in the name of the Western North Carolina Railroad Company, and secured by a first-mortgage lien on all the property and franchises of said road (of which there is now completed and equipped 115 miles). It requires one-half of the net proceeds of the road to be placed in the Treasury of the State to meet the interest accruing on the bonds semi-annually, and directs the State Treasurer to supply any deficiency that may arise, out of the common fund, and, further, makes the coupons of said bonds receivable in payment for all taxes and other dues to the State. The other half of the net proceeds of the road is to be applied toward the extension of the road to Paint Rock. It furthermore appropriates the convict labor of the State to be used in the construction and extension of the line to Paint Rock. This labor is to be guarded, clothed and fed at the State's expense."

"Under the contract made with the Commissioners acting for the State of North Carolina, they are bound to proceed to construct and complete the road to Paint Rock as rapidly as may be practicable, and to commence operations as soon as a clear title is obtained by the foreclosure sale then pending under the decree. This sale has recently been consummated, and the State is now in possession and promises to begin work at once. The bonds and mortgage, with the usual foreclosure provisions, are being prepared, and will be ready probably within thirty days, when your company is to receive in payment for its interest about \$233,000. These bonds should, and we believe will, be a first-class security, being less than \$8,000 per mile on road now completed, and when the State fulfills its engagement to extend the road to Paint Rock, will be only \$4,500 per mile on completed road."

The road to be built, from Old Fort westward to Asheville

and thence northwest to Paint Rock, is about 60 miles long. Between Old Fort and Asheville there is some difficult work; from the latter place it follows down the valley of the French Broad River, and the grading will be comparatively light.

Texas, Mississippi River & New Orleans.

It appears that there has been a conflict of jurisdiction as to the possession of certain property belonging to the Chicot & Monticello line of this company. The Little Rock Gazette says: "The sheriff of Chicot County had held the custody of the rolling stock and road fixtures since March last, under process of execution from the Pulaski Circuit Court, in favor of Gen. T. P. Dockery and others, and that under the process they had sold the property. Then certain parties claiming the property, in the name of the Receiver subsequently appointed by the United States Court, attempted to take possession of and move it away; which proceeding was successfully resisted by the county officials. Affidavits were then made by certain parties, upon which writs were issued by the United States Court for the arrest of the Chicot officials and Gen. Dockery, for contempt. A hearing under the writ will be had before Judge Caldwell in a few days."

Clover Hill.

The Richmond (Va.) Whig says: "In consequence of a disagreement between the Clover Hill Railroad Company and the Richmond & Petersburg Railroad Company, the former will hereafter run its own cars from the Chesterfield coal-pits to the landing at Osborn, on James River. The Clover Hill Company have already made arrangements for additional freight cars to meet their requirements. The company in former times conducted their business independently of the Richmond & Petersburg Railroad Company."

Memphis & Charleston.

This company has resolved to accept the terms of the tax law of 1875, and to pay to the State of Tennessee the annual tax of 1½ per cent. on gross earnings, in lieu of all other taxation.

The City Council of Memphis, Tenn., has granted the company the authority which it asked for to extend its track through the city to the levee and erect an elevator there.

In order to avoid an injunction from property owners in the streets through which the new track passes, a large force of men was gathered, the material got ready and the track was hastily put down on the night of September 12. A car passed over it on the morning of September 13. The new track will at once be put in good order and used.

Port Dover & Lake Huron.

The road is completed from Woodstock, Ont., to Norwich, about 20 miles. The grading is nearly all done, and track is being laid both from Norwich and Stratford.

RAILROAD LAW.

The Iowa Statute Relating to Injury to Employees.

In Depe against the Chicago, Rock Island & Pacific Company, on appeal, which was an action brought by a laborer on a construction train to recover damages for injury received by a bank caving in and falling on him, the Iowa Supreme Court held that the law providing that a company is liable for damages for injury sustained by any person, including employees, in consequence of neglect or mismanagement of any employee or agent of the company, is not in conflict with any provision of the constitution of the State. The court also held that the employment of the plaintiff comes within the meaning of the term "engaged in operating a railroad." The jury must determine from the evidence whether there is negligence on the part of the employee or agent who directed the work in which the plaintiff was employed.

Lost Season Tickets.

In the case of Oresson against the Philadelphia & Reading Company, the plaintiff had a season ticket stolen from him. He tendered indemnity and demanded a ticket for the unexpired term. The company refused to give it, and he proceeded to ride on the road without a ticket, and was for that cause ejected from the cars of the defendant. He then brought suit against the company in the Montgomery County (Pa.) Circuit Court, but the Court decided against him, holding that the conditions printed on the ticket set forth that the company would not issue another in case of loss or destruction of the original ticket, that the plaintiff must be presumed to know that that was one of the conditions under which the ticket was issued, and that therefore he could not recover.

Police Powers of Conductors.

A law now in force in Indiana provides that the conductors of all trains carrying passengers shall be invested with police powers while on duty on their respective trains.

When any passenger shall be guilty of disorderly conduct, or use any obscene language, play any games of cards or chance for money upon any passenger train, the conductor of such train is authorized to stop his train at any place where such offense has been committed, and eject such passenger from the train, using only such force as may be necessary to accomplish such removal, and may command the assistance of the employees of the railroad company to assist in such removal, but before doing so shall tender to such passenger such proportion of the fare he has paid as the distance he then is from the place to which he has paid his fare bears to the whole distance for which he has paid his fare.

When any passenger shall be guilty of any crime or misdemeanor upon any passenger train, the conductor of such train may arrest such passenger and take him before any justice of the peace in the county in which such crime or misdemeanor is committed, and file an affidavit before such justice of the peace, charging him with such crime or misdemeanor.

Conditional Grant of Right of Way.

In the case of Gray against the Burlington & Missouri River Company, the Iowa Supreme Court held that where the owner of real estate has granted the right of way to a railroad on condition that the company shall erect and maintain certain crossings, and the company has accepted the grant, it can not avoid liability to perform such conditions by a subsequent condemnation of the right of way under the provisions of the statute.

Validity of Tax in Aid of a Railroad.

In Ryan against Varga and others, the Iowa Supreme Court holds that where township trustees have passed upon the sufficiency of a petition calling for an election to decide the question of levying a tax in aid of a railroad, and the election has been ordered, the tax voted and levied, the validity of such tax cannot be attacked on the ground that the petition was not signed by one-third of the tax-payers, as required by law. Such action remains conclusive, until set aside or reversed, by writ of error, certiorari, or other direct proceeding provided by law.

Ohio Laws Relating to Railroads.

At its last session the Ohio Legislature passed the following laws relating to railroads:

An act to amend the law of Dec. 15, 1882, provides that any railroad company may, by the vote of a majority of the stock, increase or diminish the number of directors, provided the number fixed upon is not less than seven, or more than fifteen.

An act to amend the law of April 15, 1887, provides that within 30 days after the receipt of freight or express packages at any depot, the owners thereof must be notified either by personal notice or by mail. Lists must be kept of all goods, baggage,

etc., which cannot be delivered owing to failure to find owners, refusal to pay charges, or neglect of owner to receive them. The lists must contain a description of packages, marks, etc., and record of the place where deposited. If notice is given as above, the owner being known, or by public advertisement for ten days in a newspaper when the owner is unknown, and the packages are not claimed, the company may bring suit to recover charges and the property may be sold to pay such charges; if goods are not claimed within 10 days after notice is given they may be stored and storage charges added to freight. If not claimed within six months goods may be sold at public auction. The sale must take place at the depot or warehouse where the goods are, but if they are offered there and not sold, then the company may take them for sale to any place deemed best. Thirty days' notice of sale must be given by posting three notices in public places, besides one at the depot or warehouse and by advertising in two papers in the county where the sale is to take place. The owners of the goods may recover the amount received for the same, less all costs and charges at any time within one year after the sale, on making proofs of ownership. Perishable property not claimed after due notice may be sold at private sale. All sums unclaimed after one year shall be paid into the State treasury for account of the school fund, but may be reclaimed from the State by the owners of goods at any time within five years. Penalty for violation of the act is a fine of not less than \$100, or more than \$500. Any person embezzling or disposing of property or money held under provisions of this act shall be held guilty of larceny.

Another act makes it a misdemeanor, punishable by not less than \$10 fine and from five to thirty days' imprisonment, for any person to ride or drive a horse or other animal upon the track of any railroad which is inclosed by fences and cattle guards, as provided by law, except at a highway or a private crossing. At crossings animals must not be allowed to remain on the track longer than is absolutely necessary to cross. In constructing a private crossing the rails or ties must not be interfered with and nothing must be left on the track which would interfere with the passage of trains.

Another act authorizes the votes of absent stockholders to be cast by proxy in all cases.

Another act provides that when the majority of the stock of a company votes to extend a road, a certificate giving location of such extension, and attested as required for certificates of incorporation, must be filed with the Secretary of State and the extension shall be regarded as part of the original road. The vote on the extension must be taken at a meeting of stockholders called for that purpose.

Another act amends the procedure in the assessment and collection of compensation to owners of private property condemned for the use of a railroad, as laid down in the law of 1872. It relates mainly to details of procedure. One section provides that a company may condemn any unfinished road-bed, owned or claimed by another company, provided the same has remained unfinished and without the rails being laid for 10 years or more. In case the company shall survive and shall prove ownership, the value of the property shall be fixed by a jury, as in cases of other property.

Another act amends the laws of 1867 and 1869, and provides that application may be made to the Court of Common Pleas to wind up and dissolve a company by a majority of the directors, by holders of not less than one-third of the stock or by directors or other officers upon authority of a majority of the stock, or when the purpose for which the corporation was organized has wholly failed, been abandoned or become impracticable.

Another act exempts from the operation of the law fixing maximum rates of fare and freight roads not exceeding 12 miles in length, and roads under construction whose earnings are less than \$4,000 per mile per annum. A road must not remain uncompleted for more than five years. All actions against such roads for violation of the law, begun before the passage of this exemption act, may be maintained and penalties recovered.

An act to amend the mechanics' lien law provides that if any sub-contractor, employee or person furnishing material for a railroad, or other structure, shall fail to receive pay from the contractor, he may file with the corporation or its agent a properly attested account. The corporation shall then retain, out of any subsequent payments to the contractor, the amount due for the labor or material furnished for the benefit of the person supplying the material or performing the labor.

Injuries to Children on Track.

In the case of Isabel against the Hannibal & St. Joseph Company, as reported in the St. Louis Central Law Journal, the Missouri Supreme Court laid down the following rules:

1. It is the duty of a company to exercise ordinary care and watchfulness to avoid injuring persons on the track.

2. The track is private property, and persons have no right upon it except at crossings; hence the employees of a company are not required to exercise as much care when running through open country as at a crossing.

3. Where the railroad is built close to a man's house and the employees know that the family are in the habit of crossing the track for water, they should exercise increased vigilance to avoid injuring children; the rule would be otherwise as to adults, who should use discretion.

4. If the plaintiff has been negligent, the defendant is only liable when he omitted to exercise proper care, after becoming aware of plaintiff's danger.

5. Where the employees see an object on the track which they might, by close scrutiny, perceive to be a child, in time to avoid injuring it, a failure to recognize the child and stop the train will make defendant liable, even though those in charge of the child were negligent in allowing it to go on the track.

6. It was not error to refuse to instruct the jury that they should find for defendant in case they believed from the evidence that negligence of those in charge of the child caused or materially contributed to its death.

7. Where the law requires a track to be fenced, a failure to fence is negligence. All the surrounding circumstances must be considered; in some cases prudence would require more than the strict letter of the law demands.

8. Where, by neglect of the company, a certain place is more than ordinarily dangerous, employees must exercise a corresponding degree of caution.

9. Whether a company is liable for injuries to a child who gets upon the track where there is no fence, without proof of other negligence of the company, was not decided.

The Missouri Railroad Law.

The Central Law Journal says that there is a prospect that the validity of the late Missouri statute regulating railroad tariffs may be determined in the courts at no very distant day. An agent of the Atlantic & Pacific Railroad Company has been indicted for violation of the law, and it is understood that the case will be contested, on the ground that the charter of the company exempts it from such regulation.

Right of a Director to Purchase a Railroad at Judicial Sale.

A question decided by the Kentucky Court of Appeals in the course of the famous suit of the Covington & Lexington Company against the Bowler heirs was as to the right of a director of a corporation to purchase the property of that corporation in his own name, when the property was sold at judicial sale. The Court held that the director's position being that of a trustee, he must, in such a case, be held to have acted as trustee for the company, and the suit to recover from his heirs the property of the company so purchased was sustained.

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